CENAD-CG 29 July 2005

MEMORANDUM FOR RECORD

SUBJECT: Record of Decision Memorandum for Permit Application Number 93-0902-12 (Norfolk District) by the City of Newport News, Virginia for the King William Reservoir Project

1. Introduction/Description:

This is the decision document and Record of Decision of the U.S. Army Engineer Division, North Atlantic for the subject Department of the Army permit application submitted by the City of Newport News, Virginia on behalf of the Regional Raw Water Study Group for the King William IV Reservoir project. This Record of Decision complies with the requirements of the National Environmental Policy Act [1] and Corps of Engineers' regulations.[2] This Record of Decision supercedes the Memorandum For Record dated September 30, 2002, Subject: Decision Memorandum for the King William IV Reservoir Project, Norfolk District Application No. 93-0902-12 ("2002 Interim Decision Memorandum").

a) Permit Application's Project Description

The proposed King William IV Reservoir project would be located in the upper reaches of Cohoke Creek, in an unincorporated portion of King William County, Virginia, approximately 3.5 miles upstream of the existing Cohoke Millcreek dam and 30 miles northwest of Williamsburg, Virginia.

The King William IV Reservoir project's earthen dam would measure 78 feet in height and 1,700 feet in length. Its footprint would occupy approximately 6.1 acres of regulated freshwater wetlands. The reservoir would have a 12.2 billion-gallon storage capacity with a 1,526-acre water surface area at the normal reservoir pool elevation of 96 feet above mean sea level. The normal pool would permanently inundate approximately 397 acres of regulated freshwater wetlands and small streams.

Associated appurtenant features include a maximum 75-million-gallon-per-day raw water intake in the Mattaponi River at Scotland Landing, Virginia to withdraw, via pump station, raw river water to fill and maintain the reservoir pool. This raw river water would be transported over a 1.5-mile distance via a 54-inch-diameter pipeline between Scotland Landing and the King William IV Reservoir. A maximum 50 million-gallon-per-day pumping station would pump reservoir water via an 11.7-mile 48-inch diameter pipeline to Beaverdam Creek at New Kent, Virginia. The water would leave the pipeline via a water discharge outfall structure into Beaverdam Creek, a tributary to the existing City of Newport News Waterworks' Diascund Creek Reservoir in New Kent County. A new 40 million-gallon-per-day intake structure near the Diascund Creek Reservoir dam along

[1] Title 40 of the Code of Federal Regulations (Title 40, CFR) Parts 1500-1508
[2] Title 33, CFR Parts 320-331

with a 40 million-gallon-per-day pump station and 5.5 miles of 42-inch diameter water conveyance pipeline between Diascund Creek Reservoir and Little Creek Reservoir is also proposed.

Installation of the water conveyance pipelines will cause temporary impacts to approximately 10.4 acres of regulated waters and wetlands. A total of 437 acres of regulated waters (and wetlands) of the United States, consisting of 403 acres of freshwater wetlands and 34 acres (21 linear miles) of open water streams, will be filled or substantially modified by reservoir pool inundation.

The Mattaponi River will be the primary source of the reservoir's water. The withdrawal capacity is approximately 1.3 percent of the average tidal ebb and flow volume.[3] River water will be taken from the river during periods of high to moderate natural flows, and no withdrawals will occur during low flows, as regulated by the Commonwealth of Virginia. The Commonwealth of Virginia Marine Resources Commission permit for the proposed intake structure contains a seasonal restriction from March 1st through July 31st of any given year on river withdrawals for the protection of sensitive early life stages of American shad (*Alosa sapidissima*).[4] The enclosed application drawings show the proposed facilities described above.

A complete description of the proposed project and previous reviews and actions can be found in the January 1997 Final Environmental Impact Statement, and the July 2, 2001 Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer. Refer to the enclosed maps showing the project vicinity, the Lower Virginia Peninsula region, and the Regional Raw Water Study Group service area and host communities.

b) Applicant's Stated Project Purpose and Need

As stated in the permit application, the applicant's stated purpose and need is "to provide a dependable, long-term water supply for the Lower Virginia Peninsula, in a manner that is not contrary to the public interest." In the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer submitted July 2, 2001, the U.S. Army Engineer District, Norfolk redefined the overall project purpose as follows: "to satisfy the water supply needs of the localities in the Regional Raw Water Study Group service area through the year 2050."[5] I have carefully evaluated the applicant's original stated project purpose and need in light of Part 8 of the "Army Corps of Engineers Standard Operating

[3] See Page ES-1, Executive Summary of the Regional Raw Water Study Group's October 30, 2001 Comments on the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001
[4] See "Pumping Hiatus" on Page 2 of Virginia Marine Resources Commission permit issued August 17, 2004
[5] pp.3-4 of Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001

Procedures for the Regulatory Program".[6] This guidance provides a framework to assist in determining the appropriate project need and purpose in complex situations such as the King William IV Reservoir project. Based on application of this guidance to the instant facts, I find the applicant's stated project need and purpose statement to be reasonable and appropriate. I also find there is a need for the King William IV Reservoir as evidenced in Table 1 found on Page 5 of this Record of Decision.

c) Permit Applicant

The applicant is the City of Newport News, who submitted the permit application on behalf of the Regional Raw Water Study Group. The Regional Raw Water Study Group consists of the Cities of Newport News, Hampton, Poquoson and Williamsburg, and the Counties of York, James City, New Kent and King William. King William County is the "host county" for a proposed water intake along the Mattaponi River, a conveyance pipeline to transmit water from the Mattaponi River to the King William IV Reservoir, the 1,526-acre reservoir itself, and a portion of another conveyance pipeline leading to Diascund Reservoir. New Kent County is the "host county" for the remainder of the route of the second conveyance pipeline.

As part of agreements with both counties for construction of the pipelines and reservoir, the applicant would maintain a three-million-gallon-per-day allowance of water in the reservoir for King William County and a one-million-gallon-per-day allowance for New Kent County, for future potential use by these entities.

d) Referral of Norfolk District's Recommended Decision

On June 4, 1999, the U.S. Army Engineer District, Norfolk announced its preliminary conclusion that issuance of a Department of the Army permit for the proposal would be contrary to the public interest, and the District Engineer's intent to deny the permit application for the King William IV Reservoir project. By letter dated June 8, 1999, the Honorable James S. Gilmore, III, Governor, on behalf of the Commonwealth of Virginia, disagreed with the Norfolk District Engineer's intent to deny the application, and asked that the final decision be referred to the Division Engineer in accordance with the provisions of Title 33, CFR § 325.8 (b)(2).

[6] Issued by Headquarters, U.S. Army Corps of Engineers on October 15, 1999

e) Division Engineer's September 30, 2002 Interim Decision

On September 30, 2002, Brigadier General M. Stephen Rhoades issued an interim decision. Brigadier General Rhoades determined that there was a need for an additional, dependable, long-term water supply for the Lower Virginia Peninsula, and that the King William IV Reservoir project was a reasonable solution to fulfill the need. At that time, the following three procedural impediments precluded Brigadier General Rhoades from making a final decision on the permit application:

i) The Commonwealth of Virginia had not yet concluded that the applicant's proposal is consistent with the Virginia Coastal Resources Management Program. Pursuant to Section 307 (c) of the Coastal Zone Management Act of 1972, as amended (Title 33, U.S. Code § 1456) such concurrence is a prerequisite to Department of the Army permit issuance. The Department of Environmental Quality issued the required concurrence on December 27, 2004.

ii) The cultural resource consultation process was prematurely terminated. The U.S. Army Engineer Division, North Atlantic resumed formal consultation among the cultural resource stakeholders on July 25, 2003. A Memorandum of Agreement (also referred to as a Programmatic Agreement) for identification and treatment of cultural and historic resources, including Traditional Cultural Properties, was signed by the U.S. Army Engineer Division, North Atlantic; the permit applicant; the President's Advisory Council on Historic Preservation; and the Commonwealth of Virginia Department of Historic Resources. Successful completion of this process satisfies the Corps of Engineers' responsibilities under Section 106 of the National Historic Preservation Act of 1966, as amended (Title 16, U.S. Code § 470).

iii) At that time, the permit applicant had not submitted an acceptable plan to mitigate for adverse impacts to aquatic resources. In June 2004, the permit applicant submitted the "King William Reservoir Project Reservoir Mitigation Plan". This plan has been subjected to a public review and comment period between December 1, 2004 and February 1, 2005.

These procedural impediments have been removed and the U.S. Army Engineer Division, North Atlantic is now able to make a final decision on this permit application.

Table 1
Regional Raw Water Study Group
Year 2040 Supply Demand-Deficit Table

(NOTE: all figures in millions of gallons of water per day)

Anticipated Year 2040 treated water demand for Regional Raw Water Study Group service area[7]		85.3
Safe Yield of existing water supply sources in Regional Raw Water Study Group service area:[8]		
○ Newport News Waterworks		
• existing reservoirs	51.9	
• brackish groundwater desalinization	5.7	
○ Williamsburg Public Works		
• Waller Mill Reservoir	2.6	
• augmentation well	0.7	
○ York County wells	0.6	
SUBTOTAL	61.5	
James City Service Authority maximum authorized system capacity safe yield	7.9	
TOTAL FROM ALL STATE-AUTHORIZED WATER SUPPLY SOURCES IN REGIONAL RAW WATER STUDY GROUP SERVICE AREA		69.4
ANTICIPATED YEAR 2040 DEFICIT		15.9
King William Reservoir minimum safe yield		19.0

[7] Mean Total Demand number from Table 12 of U.S. Army Corps of Engineers' Institute for Water Resources August 15, 2001 final report titled "An Evaluation of the Risk of Water Shortages in the Lower Peninsula, Virginia"

[8] All remaining figures from June 20, 2005 City of Newport News letter to North Atlantic Division, Corps of Engineers

f) Key Decision Factors

I am basing my decision to approve the King William IV Reservoir project permit application upon:

i) A review of the applicant's stated project purpose of a long-term need for additional water supply and the anticipated timing of that need. The U.S. Army Corps of Engineers, Institute for Water Resources determined that the risk of water shortage for the region could be as early as 2015 and would fall within the 2015 to 2030 timeframe.[9] Based upon current information in the administrative record, I concur with the applicant that there is a demonstrated need for an additional water supply in the Lower Virginia Peninsula [see Table 1];

ii) An assessment of the alternatives for providing a dependable, long-term water supply for the Lower Virginia Peninsula, in a manner that is not contrary to the public interest;

iii) An evaluation of the environmental, cultural and other impacts of the alternatives, including the currently proposed King William IV Reservoir project, the Norfolk District Engineer's water supply proposals in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, and the Black Creek Reservoir;

iv) A determination of a practicable alternative with the least environmental impact, which fulfills the project purpose to meet the water supply need; and

v) A determination that the applicant's preferred, least environmentally damaging alternative (the currently proposed 1,526-acre King William IV Reservoir project) also complies with the Section 404 (b) (1) of the Clean Water Act Guidelines.

2. Applicable Decision Regulations, Guidelines and Executive Orders

The applicable decision regulations, guidelines and Executive Orders for this permit application decision are listed and discussed below:

[9] From p. 67 of August 15, 2001 Institute for Water Resource report

a) Section 404 (b)(1) of the Clean Water Act Guidelines: Any proposed discharge of dredged or fill material into waters of the United States must comply with these Guidelines before a Department of the Army permit can be issued. As stated in Section 9 of this Record of Decision, the currently proposed 1,526-acre King William IV Reservoir project complies with the Section 404 (b)(1) of the Clean Water Act Guidelines,[10] with the inclusion of appropriate and practicable measures to mitigate the proposal's ecological impacts.

b) Endangered Species Act: As discussed in Section 6 of this Record of Decision, the Corps of Engineers complied with the Endangered Species Act, Section 7 consultation requirements.

c) National Historic Preservation Act of 1966: The Corps fulfilled its responsibilities to consult with affected parties under Section 106 of the Act. Consultations culminated in the Programmatic Agreement that contains stipulations for identification and treatment of archaeological sites, historic buildings, structures and landscapes, including Traditional Cultural Properties in the area of potential effect. The permittee will be required to adhere to the Programmatic Agreement as a special permit condition. The Corps of Engineers followed the requirements of Title 36, CFR § 800.2 (c) in determining the consulting parties for the Section 106 cultural resources consultation process. Consistent with Title 36, CFR § 800.2 (d)(1), the Corps of Engineers ensured that the process was conducted in such a manner so as to respect the desires of the Native American Tribes for confidentiality.

d) Clean Air Act: The proposed permit work is located in a Clean Air Act attainment area, and complies with the Clean Air Act, Section 176 (c). The proposed permit's activities will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and as such are exempted by Title 40, CFR § 93.153. Any later indirect emissions are generally not within the Corps of Engineers' continuing program authority and cannot be practicably controlled by the Corps of Engineers. Consequently, a formal Clean Air Act Conformity Determination is not required for this permit action.

e) Executive Order No. 11988 of May 24, 1977, "Floodplain Protection": This undertaking is in compliance with this Executive Order and is discussed in Section 10, subparagraph (h) of this Record of Decision.

f) Executive Order No. 12898 of February 11, 1994, "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations": The undertaking of the proposed project is not expected to discriminate on the basis of race, color, or national origin, nor will it have a disproportionate effect on

[10] Title 40, CFR Part 230

minority and low-income communities. This determination is based upon the discussion contained in Section 5.10 of the January, 1997 Final Environmental Impact Statement.

g) Executive Order No. 13007 of May 24, 1996, "Indian sacred sites" does not apply in this matter since no federal lands are involved. The Corps of Engineers, however, voluntarily complied with the executive order's intent during extensive consultations with the Mattaponi, Pamunkey and Upper Mattaponi Native American tribes prior to finalizing the Section 106 Memorandum of Agreement.

h) Executive Order No. 13045 of April 21, 1997, "Protection of Children From Environmental Health Risks and Safety Risks": The project will comply with all local and state safety requirements and as such will protect children from disproportionately incurring environmental health risks or safety risks that might arise from issuance of a Department of the Army permit for this project.

i) Corps of Engineers' Public Interest Review Criteria Compliance:

> i) The Corps of Engineers' Regulatory Program considers the full public interest by balancing the favorable impacts of a proposal against its detrimental impacts. This "public interest review" states:
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> > ...the decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impact that the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process. That decision should reflect the concern for both protection and utilization of important resources.[11]
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> This regulation continues with a listing of various public interest review factors that must be considered, along with the cumulative effects thereof, if they are relevant to a given proposal.[12] In the final analysis, "...a permit will be granted unless the [division] engineer determines that it would be contrary to the public interest."

[11] Title 33, CFR § 320.4 (a)(1)
[12] These public interest review factors are discussed in Section 10 of this Record of Decision and in Section 5 of the 2002 Decision Memorandum

ii) The general criteria that must to be considered in the evaluation of every application are discussed in Section 11 of this Record of Decision. The specific weight of each public interest factor is determined by its importance and relevance to this particular proposal; however, we have given full consideration and appropriate weight to all comments, including those of federal, state and local agencies, and other experts on matters within their expertise.[13]

iii) Section 10, subparagraph e) of this Record of Decision concludes that the wetlands impacted by this project perform functions important to the public interest.[14] In accord with the regulations, no permit will be granted which involves the alteration of wetlands performing functions important to the public interest unless the Corps of Engineers determines that the benefits of the proposed alteration outweigh the damage to the wetlands resource.[15]

iv) In the absence of overriding national factors of the public interest, a permit will generally be issued following receipt of a favorable state determination provided the policies, goals and requirements of the Corps of Engineers' regulations and relevant federal environmental laws and regulations have been considered and followed.[16] If, however, the decision is that the proposal is contrary to the public interest, the significant national issues shall be included in the decision document along with an explanation how these issues are overriding in importance.[17]

v) One public interest evaluation factor is for water supply and conservation.[18] Actions affecting water quantities are subject to Congressional policy as stated in Section 101 (g) of the Clean Water Act, which provides that the authority of states to allocate water quantities shall not be superceded, abrogated or impaired.

vi) The regulations[19] grant the Division Engineer the authority to issue or deny permits pursuant to Section 10 of the Rivers and Harbors Act of 1899[20] and Section 404 of the Clean Water Act,[21] and Division Engineers may also place special conditions upon DA permits.[22]

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[13] Title 33, CFR § 320.4 (a)(3)
[14] Functions are defined at Title 33, CFR § 320.4 (b)(2)
[15] Title 33, CFR § 320.4 (b)(4)
[16] Title 33, CFR § 320.4 (j)(4)
[17] Title 33, CFR § 325.2 (a)(6)
[18] Title 33, CFR § 320.4 (m)
[19] Title 33, CFR § 325.8 (c)
[20] Title 33, U.S. Code § 403
[21] Title 33, U.S. Code § 1344
[22] Title 33, CFR § 325.4

Additionally, the Corps of Engineers' public interest review process mandates consideration of the practicability of using reasonable alternative locations and methods to accomplish the objectives of the proposed structure or work.[23] Consideration of speculative alternative(s), that may or may not be available in the future falls outside the range of alternatives to be considered in the public interest review process. Likewise, the Section 404 (b)(1) Guidelines mandate consideration of practicable alternatives, which are defined as being available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purpose.[24]

3. Background:

a) Permit Application Chronology

i) July 30, 1990: U.S. Army Engineer District, Norfolk published in the Federal Register the Notice of Intent to prepare a Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

ii) August 1, 1990: U.S. Army Engineer District, Norfolk issued a public notice requesting comments on the scope of study for the Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

iii) December 17, 1990: U.S. Army Engineer District, Norfolk issued the scoping outline for the Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

iv) July 6, 1993: U.S. Army Engineer District, Norfolk received the Department of the Army permit application for the original King William I Reservoir project configuration from the City of Newport News on behalf of the Regional Raw Water Study Group.

v) February 4, 1994: U.S. Army Engineer District, Norfolk issued the Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

vi) March 8, 1994: U.S. Army Engineer District, Norfolk held a public hearing to collect comments on the Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan. Subsequent to this hearing, U.S. Army Engineer District, Norfolk extended the deadline for submission of written comments from March 21, 1994 to April 20, 1994.

[23] Title 33, CFR § 320.4 (a)(2)(ii)
[24] Title 40, CFR § 230.10 (a)(2)

vii) June 8, 1994: U.S. Army Engineer District, Norfolk published in the Federal Register the Notice of Intent to prepare Supplemental Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

viii) June 14, 1995: City of Newport News submitted a revised Department of the Army permit application to the U.S. Army Engineer District, Norfolk for a reconfigured, smaller King William II Reservoir project.

ix) December 29, 1995: U.S. Army Engineer District, Norfolk issued the Supplemental Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

x) February 12, 1996: U.S. Army Engineer District, Norfolk extended the deadline from February 12, 1996 to March 13, 1996 for submission of written comments on the Supplemental Draft Environmental Impact Statement for the Lower Virginia Peninsula Regional Water Supply Plan.

xi) December 30, 1996: The City of Newport News submitted a second revised Department of the Army permit application to the U.S. Army Engineer District, Norfolk for currently proposed 1,526-acre King William IV Reservoir project.

xii) January 24, 1997: U.S. Army Engineer District, Norfolk published in the Federal Register the notice of issuance of the Final Environmental Impact Statement for an initial 60-day comment period. The district subsequently extended the deadline for submission of written comments three times; the final 180-day comment period expired on July 25, 1997.

xiii) June 4, 1999: U.S. Army Engineer District, Norfolk announced their intention to deny the Department of the Army permit application for the proposed 1,526-acre King William IV Reservoir project.

xiv) June 8, 1999: Commonwealth of Virginia Governor James S. Gilmore III provided the Commonwealth's written opposition to the Norfolk District Engineer's proposed decision.

xv) April 21, 2000: U.S. Army Engineer Division, North Atlantic instructed the Norfolk District Engineer to provide stakeholders with a 45-day opportunity to comment on the Norfolk District's Recommended Record of Decision of the District Commander.

xvi) March 20, 2001: U.S. Army Engineer District, Norfolk issued a public notice announcing the availability of the Recommended Record of Decision of the District Commander for a 45-day comment period.

xvii) July 2, 2001: U.S. Army Engineer District, Norfolk completed the Final Recommended Record of Decision of the District Commander.

xviii) August 8, 2001: U.S. Army Engineer Division, North Atlantic Commander notified interested parties of a 65-day comment period for the Final Recommended Record of Decision of the District Commander.

xix) October 17, 2001: U.S. Army Engineer Division, North Atlantic extended the deadline for receipt of written comments regarding the Recommended Record of Decision of the District Commander from October 17, 2001 to October 31, 2001.

xx) September 30, 2002: North Atlantic Division Commander issued the 2002 Interim Decision Memorandum.

xxi) February 27-28, 2003: U.S. Army Engineer Division, North Atlantic and City of Newport News engaged in a permit application update meeting.

xxii) April 8, 2003: U.S. Army Engineer Division, North Atlantic informed the Mattaponi, Pamunkey and Upper Mattaponi Native American Tribes of the resumption of Section 106 consultations and that the City of Newport News had been directed to resume negotiations with tribes on mitigation for impacts to Traditional Cultural Properties.

xxiii) April 10, 2003: U.S. Army Engineer Division, North Atlantic hosted an interagency wetland mitigation meeting with the City of Newport News, the U.S. Environmental Protection Agency, the U.S. Fish & Wildlife Service, and the Commonwealth of Virginia Department of Environmental Quality.

xxiv) May 16, 2003: Commonwealth of Virginia Marine Resources Commission denied the City of Newport News's application for a state permit to install an intake structure in Mattaponi River and to construct water conveyance pipelines.

xxv) July 25, 2003: An initial cultural resources meeting was held between U.S. Army Engineer Division, North Atlantic and the Commonwealth of Virginia Department of Historic Resources

xxvi) August 4-8, 2003: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the U.S. Environmental Protection Agency, and the U.S. Fish & Wildlife Service conducted a series of site inspections to assess the viability of the proposed wetland mitigation plans.

xxvii) September 15 & October 9, 2003: Follow-up interagency wetland mitigation meetings were held with the City of Newport News.

xxviii) November 14, 2003: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the U.S. Environmental Protection Agency, the U.S. Fish & Wildlife Service and the Commonwealth of Virginia Department of Historic Resources conducted inspections to assess the viability of two proposed contingency mitigation sites.

xxix) December 12, 2003 & February 18, 2004: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the Commonwealth of Virginia Department of Historic Resources, the President's Council on Historic Preservation, the Native American tribes and other cultural resource stakeholders participated in consultation meetings.

xxx) February 26, 2004: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the U.S. Environmental Protection Agency, and the U.S. Fish & Wildlife Service met to discuss the wetlands mitigation proposal.

xxxi) April 20, 2004: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the Commonwealth of Virginia Department of Historic Resources, the President's Council on Historic Preservation, the Native American tribes and other cultural resource stakeholders participated in a consultation meeting.

xxxii) June 2, 2004: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the U.S. Environmental Protection Agency, and the U.S. Fish & Wildlife Service met to discuss the wetlands mitigation proposal.

xxxiii) June 3, 2004: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the Commonwealth of Virginia Department of Historic Resources, the President's Council on Historic Preservation, the Native American tribes and other cultural resource stakeholders participated in a consultation meeting.

xxxiv) August 17, 2004: Commonwealth of Virginia Marine Resources Commission issued a state permit for construction of an intake in the Mattaponi River and water conveyance pipelines.

xxxv) October 21, 2004: Cultural resources meeting held between U.S. Army Engineer Division, North Atlantic and the Commonwealth of Virginia Department of Historic Resources.

xxxvi) December 27, 2004: Commonwealth of Virginia Department of Environmental Quality concurred with applicant's certification of consistency with the Virginia Coastal Resources Management Program.

xxxvii) December 1, 2004: U.S. Army Engineer Division, North Atlantic posted on its web site the City of Newport News's proposed Streams & Wetlands Mitigation Plan for a 60-day public comment period that ended on February 1, 2005.

xxxviii) April 25, 2005: U.S. Army Engineer Division, North Atlantic distributed to the cultural resource consulting parties for a 45-day comment period a draft Memorandum of Agreement specifying identification and treatment of cultural resources in the permit area of the proposed King William IV Reservoir project.

xxxix) May 10, 2005: Representatives of U.S. Army Engineer Division, North Atlantic, the City of Newport News, the Commonwealth of Virginia Department of Historic Resources, the President's Council on Historic Preservation, the Native American tribes and other cultural resource stakeholders participated in a consultation meeting.

xl) June 27, 2005: The Advisory Council on Historic Preservation signed the Final Memorandum of Agreement.

xli) July 8, 2005: U.S. Army Engineer Division, North Atlantic invited the consulting parties to sign the Final Memorandum of Agreement.

b) Permit Application Revisions

The first revised permit application[25] involved a re-siting of the proposed reservoir dam to a location approximately 2,900 feet upstream of the originally proposed dam location. The second revised permit application,[26] which is the current proposal, involved a re-siting of the proposed dam to a location approximately 6,600 feet further upstream, or 9,700 feet upstream of the originally proposed dam location. The proposed reservoir impoundment area was correspondingly reduced from 2,284 acres to 1,526 acres as a result of the project modifications, and the proposed storage capacity was likewise reduced from 21.2 to 12.2 billion gallons of water. These changes also reduced the project's impacts to regulated waters of the United States from 653 acres to 437 acres. Notwithstanding these changes, the capacity of the King William IV Reservoir is sufficient to meet the long-term water supply needs for the Lower Virginia Peninsula.

[25] Project referred to in the FEIS as KWR-II
[26] Project referred to in the FEIS as KWR-IV

In June 2004, the applicant submitted a detailed conceptual aquatic ecological mitigation proposal.[27] After review by the U.S. Army Engineer Division, North Atlantic, the proposal was subjected to a public review and comment period between December 1, 2004 and February 1, 2005. The document details the planned creation/restoration of 806 acres of wetlands and creation, enhancement and preservation of 36.4 miles of streams. In addition, the Commonwealth of Virginia Department of Environmental Quality Water Protection Permit/Water Quality Certificate for the project requires the restoration of anadromous fish passage in the York River Basin. The applicant is currently working with the Commonwealth of Virginia Department of Game and Inland Fisheries to identify suitable streams where existing dams could either be removed entirely or retrofitted with fish passage structures.

Consultations among the Corps of Engineers, the President's Advisory Council on Historic Preservation, the Commonwealth of Virginia Department of Historic Resources, the applicant, and affected cultural resource stakeholders resulted in a final Memorandum of Agreement under Section 106 of the National Historic Preservation Act of 1966. The final Memorandum of Agreement specifies procedures for identification and protection of cultural and historic resources, including Traditional Cultural Properties, identified now and during final design and construction.

c) Public Comments

As described in Section 4 of the 2002 Interim Decision Memorandum, the U.S. Army Engineer Division, North Atlantic conducted a written public comment period for the Norfolk District Engineer's Recommended Record of Decision, from August 13, 2001 through October 31, 2001. The general public has continued to submit written comments on the permit application after the closure of the formal comment period. During the period immediately following completion of the Final Section 106 Memorandum of Agreement, over 100 pre-printed postcards and nearly 200 form letters were mailed or faxed. These correspondences did not yield any substantive new information or issues that were not already in the administrative record.

4. Commonwealth of Virginia Approvals

The views of state and local jurisdictions with respect to the issue of project need should be afforded great weight in the public interest review process. This is consistent with the provisions of Title 33 CFR, § 320.4 (j)(4), which states: "In the absence of overriding national factors of the public interest which may be

[27] See June 2004 document titled "King William Reservoir Project Reservoir Mitigation Plan" (Streams & Wetlands Mitigation Plan), prepared by Malcolm Pirnie.

revealed during the evaluation of the permit application, a permit will generally be issued following receipt of a favorable state determination... ".

A list of potential overriding issues of national importance can be found at Title 33, CFR § 320.4 (j)(2): "Such issues would include but are not necessarily limited to national security, navigation, national economic development, water quality, preservation of special aquatic areas, including wetlands, with significant interstate importance, and national energy needs." The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 omitted this discussion as required by Title 33, CFR § 325.2 (a)(6) when a project has received a favorable state determination.

In consideration of this requirement, I note that the Commonwealth of Virginia Department of Health regulates water supply systems in the state, and has policies requiring water suppliers to "...cause plans and specifications to be developed for expansion of the waterworks to include a schedule for construction..." when "the water production of a community waterworks reaches 80% of the rated capacity of the waterworks for any consecutive three-month period...".[28] The City of Newport News has been above this 80 percent "trigger point" since 1988 despite adding a 5.7-million-gallon-per-day groundwater desalinization facility in 1998.[29] The King William IV Reservoir project is the applicant's final proposal to address regional water supply needs.

The Commonwealth of Virginia agencies has granted the applicant's project the following necessary state-issued approvals:

a) Effective December 22, 1997, the State Water Control Board within the Virginia Department of Environmental Quality issued a Water Protection Permit, which also included a Water Quality Certificate pursuant to Section 401 of the Clean Water Act. They also approved a major modification of this permit on December 27, 2002, expiring December 22, 2007. The Section 401 of the Clean Water Act Water Quality Certificate issued by the Commonwealth of Virginia contains conditions on water withdrawal, transfer and release which reasonably mitigate environmental impacts that are expected to result from the day-to-day operation of the proposed reservoir. Any special conditions of this or any subsequently issued or modified water quality certificate will automatically become a special condition of this Department of the Army permit as required by Section 401 (d) of the Clean Water Act.

[28] From 12 Va. Admin Code 5-590-520
[29] See Page II-1 of Regional Raw Water Study Group's October 30, 2001Comments on Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001

b) On August 17, 2004, the Virginia Marine Resources Commission issued a permit to construct the intake structure, water distribution lines and a discharge structure.[30]

c) On December 27, 2004, the Virginia Department of Environmental Quality concurred with the applicant's Certification of Consistency with the Virginia Coastal Resources Management Program, which is the federally approved Coastal Zone Management Program for the Commonwealth of Virginia.

In light of the state's approvals and in consideration of the requirements of 33 CFR, § 320.4 (j), I conclude that there are no overriding national issues of the public interest. The proposed King William IV Reservoir would not have substantial effects in terms of national security, navigation, national economic development, and national energy needs. In accordance with Title 33, CFR § 320.4 (d) the state-issued Water Protection Permit/Water Quality Certificate is considered conclusive with regard to state water quality standards. While regionally important, the wetlands within the reservoir pool are not of significant interstate importance.

5. Need for Additional Water Supply for the Lower Virginia Peninsula

I find that the proposed King William IV Reservoir project will have a significant positive effect upon the Lower Virginia Peninsula water supply. The Corps of Engineers Institute for Water Resources has determined that a risk of long-term water supply shortage is likely to begin to exist between 2015 and 2030.

As more fully discussed in Section 10, subparagraph m), construction of the King William IV Reservoir project is necessary to meet the stated project need and purpose. Non-reservoir alternatives, including withdrawals of brackish and fresh groundwater and desalinization of surface water, are insufficient to meet the area's water supply need. Further, saltwater intrusion into regional aquifers is a reasonably foreseeable adverse impact that can result from excessive groundwater withdrawal.

6. Corps of Engineers' Endangered Species Act Coordination

On February 2, 1998, the U.S. Army Engineer District, Norfolk requested formal consultation with the U.S. Fish & Wildlife Service ("the Service") pursuant to Section 7 of the Endangered Species Act of 1973, as amended (Title 16, U.S. Code § 1531 *et. seq.*). The Service responded in a September 18, 1998 letter, in which they issued a biological opinion on the impacts of the King William IV Reservoir project and the Mattaponi River intake structure upon two federally

[30] See Section 1 a) of this Record of Decision for details

listed threatened plant species, namely *Isotria medeoloides*, the small whorled pogonia, and *Aeschynomene virginica*, the sensitive joint-vetch. The biological opinion concluded that the applicant's proposal is not likely to jeopardize the continued existence of small whorled pogonia or sensitive joint-vetch, and noted that no critical habitat has been designated for these species. Nonetheless, the biological opinion also included the following conservation recommendations:

a) small whorled pogonia plant--
   i) the Service recommended easement protection of a portion of a property in James City County containing a small whorled pogonia colony;
   ii) If no protection agreement is possible on that property after extensive efforts are expended, the Service recommends that the Corps of Engineers pursue protection of a small whorled pogonia colony in Gloucester County, Virginia.

b) sensitive joint-vetch plant--
   i) the Service recommended adoption of minimum in stream flow restrictions on raw water withdrawal from the Mattaponi River, which stipulate a river flow by regime of a modified 80 percent exceedence of each month's flow duration statistics. This is commonly referred to as the "80% Exceedence Mean In stream Flow", and is currently required by the state-issued Water Protection Permit/Water Quality Certificate. The Service does not find the applicant's proposed minimum flow regime of 40%/20% of Mean Annual Flow to have enough linkage to biological processes and historic flow regimes;
   ii) The Service also recommends implementing a Mattaponi River Monitoring Plan including controlling initial filling of the reservoir to serve as a research opportunity;
   iii) annual monitoring of all extant and appropriate historic sensitive joint-vetch sites on the Mattaponi and Pamunkey Rivers;
   iv) strict control of invasive species at the raw water intake site on the Mattaponi River;
   v) proper marking of the recreational vessel channel in the Mattaponi River after the intake is installed; and
   vi) consideration of land acquisition or conservation easement protection of sensitive joint-vetch habitats including the Garretts Creek Marsh and Gum Marsh plus upland buffers.

To address the conservation recommendation for the small whorled pogonia plant, the Corps of Engineers will include in the permit a special condition that states:

> Within 180 days of the date of issuance of this permit, and in accordance with the small whorled pogonia plant Conservation Recommendation of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion, the permittee shall commence negotiations with the landowner of property identified as New Town Section 8, Parcel ID 38410156, the location of a colony of small whorled pogonia (*Isotria medeoloides*) in James City County, Virginia with the intent of reaching agreement for purchase of a conservation easement area to protect the small whorled pogonia colony. If agreement cannot be reached for a conservation easement on the above referenced property within 180 days of the commencement of negotiations as described above, the permittee shall immediately commence negotiations with the landowner of a private property identified as Parcels 39-1C, 39-208 & 39-201 in Gloucester County, Virginia to preserve an existing small whorled pogonia colony and eight acres of surrounding buffer. The permittee shall submit any proposed easement language for the site to the U.S. Army Corps of Engineers for agencies' coordination, review and approval before any easement is recorded. The permittee shall consult with the U.S. Army Corps of Engineers in the event of negotiation failure.

Regarding the issue of minimum in stream flow restrictions for the sensitive joint-vetch plant, the current Commonwealth-issued Water Protection Permit/Water Quality Certificate for this project, which expires on December 22, 2007, contains a maximum daily withdrawal restriction of 75 million gallons of water. The permit also prohibits withdrawals when freshwater inflow falls below certain minimum monthly values, or when withdrawals would result in the inflow falling below the minimum monthly values. The Virginia Department of Environmental Quality will determine the appropriate in stream flow regime when the permit comes up for renewal in 2007. Under Section 401 (d) of the Clean Water Act, special conditions of a Water Quality Certificate become special conditions of a Department of the Army permit.

To address the conservation recommendation for a Mattaponi River Monitoring Plan to include controlling initial filling of the reservoir, the Corps will include in the permit a special condition that states:

> Within one year of the date of issuance of this permit, the permittee shall submit a draft monitoring plan for the Mattaponi River to the U.S. Army Corps of Engineers for agencies' coordination, review and approval. Said plan shall include provisions for controlling of initial filling of the King William IV Reservoir as a research opportunity, in accordance with sensitive joint-vetch plant Conservation Recommendation B) of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion.

To address the conservation recommendation calling for annual monitoring of all extant and appropriate historic sensitive joint-vetch plant sites on the Mattaponi and Pamunkey Rivers, the Corps will include in the permit a special condition that states:

> The permittee shall monitor, for a ten-year period, all extant and appropriate historic sensitive joint-vetch sites on the Mattaponi and Pamunkey Rivers in accordance with sensitive joint-vetch Conservation Recommendation C) of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion. The specific monitoring period will be determined by the U.S. Army Corps of Engineers in consultation with the U.S. Fish & Wildlife Service.

To address the conservation recommendation regarding invasive species control, the Corps will include in the permit a special condition that states:

> No less than one year prior to the date of commencing intake structure construction activities in the Mattaponi River, and in accordance with sensitive joint-vetch Conservation Recommendation D) of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion, the permittee shall submit to the U.S. Army Corps of Engineers for agencies' coordination, review and approval before any easement is recorded, a written plan for strict control of invasive species at the Mattaponi River intake site at Scotland Landing, Virginia. The permittee shall immediately notify the U.S. Army Corps of Engineers if the execution of said plan would result in an additional discharge of dredged or fill material into jurisdictional waters of the United States.

To minimize conflicts between boaters and the water intake structure, and to minimize wake damage to the sensitive joint-vetch plant, the Corps will include in the permit a special condition that states:

> No less than one year prior to the date of commencing intake structure construction activities in the Mattaponi River, and in accordance with sensitive joint-vetch Conservation Recommendation E) of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion, the permittee shall submit to the U.S. Army Corps of Engineers for agencies' coordination, review and approval, a plan for installation of an appropriate series of buoys and/or markers in the Mattaponi River in the vicinity of the intake site. The plan shall prescribe means for protection of the intake structure from potential damage by passing vessels, and for minimization of boat wake impacts to sensitive joint-vetch plant habitat at Garretts Creek Marsh. The permittee shall also submit all necessary permit applications

> to secure any necessary federal (Non-U.S. Army Corps of Engineers), state and/or local approvals to perform such work.

To address the conservation recommendation calling for consideration of land acquisition or conservation easement protection or sensitive joint-vetch habitats, the Corps will include in the permit a special condition that states:

> Within 180 days of the date of issuance of this permit, and in accordance with the sensitive joint-vetch plant Conservation Recommendation F) of the U.S. Fish & Wildlife Service's February 2, 1998 Biological Opinion, the permittee shall commence negotiations with the landowner(s) of properties containing the Garretts Creek Marsh and Gum Marsh, plus upland buffer areas, with the intent of reaching agreement for land acquisition or purchase of a conservation easement area to protect the sensitive joint-vetch populations. The permittee shall submit a suitable protection plan, including configuration of upland buffers, plus any proposed easement language for the site to the U.S. Army Corps of Engineers for agencies' coordination, review and approval before any easement is recorded. The permittee shall consult with the U.S. Army Corps of Engineers in the event of negotiation failure.

Finally, the Service indicated in the Biological Opinion that before the state-issued Water Protection Permit/Water Quality Certificate expires it may receive additional information on potential or actual impacts to the colonies of sensitive joint-vetch in the Mattaponi and Pamunkey Rivers.[31] Such information may require the Service to reassess its biological opinion. If such a reassessment is deemed necessary, the Corps of Engineers will fulfill its responsibilities pursuant to Section 7 of the Endangered Species Act, which are to ensure through consultation with the Service that permit actions will not jeopardize the existence of a listed endangered species or result in the destruction or adverse modification of designated critical habitat.

In a June 23, 2005 letter, the Service submitted additional comments for the North Atlantic Division Engineer's consideration. The Service suggested that the Corps should evaluate whether to reinitiate Section 7 consultation pursuant to the Endangered Species Act. The specific issue is whether anti-fouling chemicals that may potentially be used in a chemical feed system to be installed within the Mattaponi River intake structure may affect the sensitive joint-vetch plant. The City of Newport News indicates they do not currently envision an immediate need to activate and use this chemical feed system, since invasive species such as the zebra mussel do not currently inhabit the Mattaponi River. However, should the zebra mussel or other species that could possibly foul the

[31] U.S. Fish & Wildlife Service's Biological Opinion, September 18, 1998

intake structure inhabit the Mattaponi River at a future time, it may become necessary to activate and operate the chemical feed system. In view of this, the Corps will include the following special condition in the permit:

> Should bio-fouling mollusks, such as the zebra mussel, become present in the York River, the permittee shall submit to the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service, Chesapeake Bay Field Office, for approval an Operational Plan for installation and operation of a chemical feed system that can apply chemicals within the intake pipe on the river side of raw water pump discharge check valves. The Operational Plan shall detail the proposed chemicals or other measures to be utilized to protect its intake structures from such species, and shall be accompanied by a technical assessment of the potential impact on river habitat and fisheries resources, including a specific assessment for listed species, resulting from activation of the proposed measures. The permittee shall not install or operate this chemical feed system until the U.S. Army Corps of Engineers has notified them in writing that the requirements of Section 7 of the Endangered Species Act of 1973, as amended (Title 16, U.S. Code § 1531 *et. seq.*) have been satisfied and that permission is granted to install and activate the chemical feed system.

The U.S. Army Engineer Division, North Atlantic has reviewed the Biological Opinion in light of the Commonwealth-mandated change in the Mattaponi River raw water withdrawal regime. The City of Newport News indicates that the maximum withdrawal rates from the Mattaponi River under the current withdrawal regime, which includes a five-month withdrawal hiatus (March through July) each year, are much less than the simulated withdrawal regime used in the 1991 Virginia Institute for Marine Sciences study (Appendix VI of the Final Environmental Impact Statement) which formed the basis for the Mattaponi River salinity analysis in the Corps of Engineers' Final Environmental Impact Statement. Section 5.2.3 of the Final Environmental Impact Statement states that natural Mattaponi River salinity fluctuations greatly exceed any salinity changes that are predicted due to the earlier simulated raw water withdrawal regime. The currently proposed raw water withdrawal regime would result in lesser impacts than those described in the Final Environmental Impact Statement. On the basis of this information, we believe potential salinity impacts to the sensitive joint-vetch plant would be less than previously determined.

In view of the foregoing analysis, and the series of special conditions to be included in the Department of the Army permit for protection of the listed threatened plant species, the U.S. Army Engineer Division, North Atlantic believes that it is not necessary to reinitiate Section 7 consultation at this time. This determination was relayed to the Service in a July 14, 2005 letter.

7. Streams & Wetlands Mitigation Plan

As indicated in Section 9 of this Record of Decision, I find that the King William IV Reservoir project's proposed discharges of dredged or fill material comply with the requirements of the Section 404 (b)(1) of the Clean Water Act Guidelines with the inclusion of appropriate and practicable means to minimize the adverse effects of the proposed discharges. These appropriate and practicable means include best management practices that the permittee must implement to minimize adverse effects during both the construction and operation of the reservoir as set forth in the state-issued permits and certificates. Additional appropriate and practical measures for minimizing the adverse effect of the proposed discharges include the applicant's successful completion of the Streams & Wetlands Mitigation Plan, which is includes as a special condition of the Department of the Army permit.[32] This plan provides a detailed history of its evolution; the process used to select candidate sites; information regarding the proposed wetland creation or restoration sites; a proposal for protection of the area downstream of the proposed dam; stream and riparian corridor mitigation; information on functional assessment; and assurances for successful implementation of the plan components, including a 20-year monitoring period for wetland sites with annual progress reports distributed to the Commonwealth of Virginia Department of Environmental Quality, the U.S. Environmental Protection Agency Region III, the U.S. Fish and Wildlife Service's Chesapeake Bay Office, and the U.S. Army Engineer District, Norfolk.

a) Impacts

The proposed 1,526-acre King William IV Reservoir project would result in the direct loss or substantial hydrologic modification of approximately 437 acres of jurisdictional waters of the United States, consisting of 403 acres of freshwater wetlands and 34 acres of open water, inclusive of 21 miles of streams.

b) Mitigation

The Streams & Wetlands Mitigation Plan developed by the applicant is expected to successfully create or restore approximately 806 acres of freshwater wetlands on 11 different sites, along with creating, enhancing or preserving approximately 36.4 miles of streams. The 806-acre figure represents a 2:1 acre-for-acre replacement for the wetland acreage to be impacted, as required by Special Condition D. 1 of the state-issued Water Protection Permit/Water Quality

[32] Additional references to mitigation can be found at Title 33, CFR § Part 320.4 (r); in Regulatory Guidance Letter 02-2 dated December 24, 2002, "Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899"; and in the February 6, 1990 Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines.

Certificate. The newly created or restored wetlands will have direct hydrologic connections to Chesapeake Bay; in contrast, the 403 acres of wetlands within the proposed reservoir footprint are separated from the bay by the downstream Cohoke Millpond dam. Thus, the functions of the created or restored wetlands would directly benefit the Chesapeake Bay aquatic ecosystem. In addition, the applicant proposes to preserve 315 acres of existing wetlands, and restore or preserve over 703 acres of existing uplands on the 11 primary mitigation sites.[33] The mix of wetland and upland habitats in the mitigation sites is encouraged in Section 2.a. of Regulatory Guidance Letter 02-2 in that this provides a greater variety of functions when viewed from a watershed perspective.

Of the 21 miles of streams to be hydrologically modified by flooding, approximately 14.5 miles are primary streams, three miles are tributaries to primary streams, and 3.5 miles are headwater streams. The applicant proposes ratios of 1:1 for stream restoration, 1.5:1 for enhancement and 2.5:1 for preservation, equaling 36.4 stream miles. This stream mitigation involves 4.4 miles of stream restoration, 14.3 miles of stream enhancement, and 17.7 miles of stream preservation.[34]

The total amount of acreage of proposed streams and wetlands mitigation, plus preservation of existing wetlands, restoration or preservation of uplands and buffer areas at both the mitigation and reservoir construction sites, reservoir shoreline wetlands[35] and shallow water habitat, deep water habitat and preserved lands downstream of the proposed reservoir dam will total approximately 6,103 acres, of which approximately 806 acres (186 acres of existing wetlands and 620 acres of existing uplands) will be downstream of the proposed dam.[36] Under the terms of an agreement between the applicant and King William County, the County has a right to pursue a future dam downstream of the currently proposed King William IV Reservoir project's earthen dam site, and as a result these 806 acres are not proposed to be protected in perpetuity. Therefore, the acreage to be protected in perpetuity totals 5,297 acres, thereby ensuring a permanent benefit to the Chesapeake Bay watershed by providing a greater variety of ecological functions from the mix of open water, wetland and upland habitats.

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[33] Table on p. ES-7 of the Streams & Wetlands Mitigation Plan. The King William Farm site proposed mitigation will consist of 34 acres of prior converted cropland restoration and four acres of enhancement of existing wetlands. The applicant has counted this proposed four-acre enhancement as one acre of wetland restoration/creation.

[34] Refer to p. ES-10 of the Streams & Wetlands Mitigation Plan for the applicant's description of their planned restoration, enhancement and preservation measures.

[35] The applicant estimates that 200 acres of shoreline wetlands and 122 acres of shallow water habitat would potentially develop along the reservoir shoreline; however this acreage is not included in the 806 acres of proposed wetland creation/restoration.

[36] This figure should not be confused with the 806 acres of proposed wetland creation/restoration under the Streams & Wetlands Mitigation Plan

c) Functional assessments

Based upon Wetland Evaluation Technique and Evaluation for Planned Wetlands studies of the wetlands to be impacted, and the subsequent Habitat Evaluations Procedures analysis, the applicant performed functional assessments for this project which focused on four priority functions: total net primary productivity; water quality as quantified by sediment retention and nutrient assimilation; habitat functions using the Habitat Evaluation Procedures; and landscape interspersion and connectivity.[37]

i) Total Net Primary Productivity: The assessment of changes in Total Net Primary Productivity demonstrated that the flooding of Cohoke Creek and establishment of wetlands at the mitigation sites will result in an increase in aquatic net primary productivity; a smaller loss in terrestrial net primary productivity, and an overall gain in net primary productivity. The applicant estimates Total Net Primary Productivity will increase between 913 and 2,625 tons of carbon per year.

ii) Water Quality: The water quality assessment concluded that development of the reservoir and mitigation sites will result in a net increase in sediment retention and nutrient assimilation, specifically a 742 ton per year reduction in sediment loading, a 36,000 pound per year reduction in total nitrogen loading, and a 1,900 pound per year reduction in phosphorous loading. The reduction in the loading of these substances will substantially benefit Chesapeake Bay.

iii) Habitat Functions: The Habitat Evaluation Procedures study lasted three years and the study results demonstrated that the mitigation components will provide habitat gains for all wetland dependent species.[38] The Streams and Wetlands Mitigation Plan also offsets habitat losses for many upland species and provides some level of compensation for every evaluated upland species. The Plan, however does not fully offset impacts to the redfin pickerel, a non-federally endangered or threatened fish species; however, taken as a whole, successful completion of the Streams & Wetlands Mitigation Plan will result in an overall net gain in habitat.

iv) Landscape Interspersion and Connectivity: The 403 acres of wetlands to be flooded are disconnected from Chesapeake Bay by the Cohoke Millpond Dam. On the other hand, the 5,297 acres of wetlands, open water, and uplands to be preserved as part of the Streams & Wetlands Mitigation Plan would be directly connected to Chesapeake Bay. Therefore, landscape interspersion and connectivity will be

[37] The results of the functional assessment are shown in Chapter 8 of the Streams & Wetlands Mitigation Plan.
[38] See Table 8-6 of the Streams & Wetlands Mitigation Plan

> substantially improved as a result of reservoir construction and successful completion of the mitigation efforts.

On the basis of the increase in Total Net Primary Productivity, improved water quality, net habitat gains and improved landscape interspersion and connectivity, the Corps of Engineers has determined that successful completion of the elements of the Streams & Wetlands Mitigation Plan will as a whole offset anticipated losses in these functional areas, thereby meeting all applicable wetland mitigation policies and regulations.

The Corps of Engineers has considered the U.S. Fish & Wildlife Service's most recent position that the proposed mitigation is inadequate, as indicated in their February 1, 2005 letter. As discussed later in this section of this Record of Decision, the Corps of Engineers does not agree that the proposed mitigation is inadequate. It is duly noted that, prior to the February 1, 2005 letter, the U.S. Fish & Wildlife Service had agreed that the 2:1 acre-for-acre wetland mitigation proposal would achieve full functional replacement.[39]

d) Interagency Mitigation Team

In 1995, representatives of the U.S. Army Engineer District, Norfolk, U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service and Virginia Department of Environmental Quality formed an Interagency Mitigation Team. A total of 27 office and field meetings were conducted between 1995 and 2004 to help formulate and refine the Streams & Wetlands Mitigation Plan. The team recommended a number of measures to avoid and minimize impacts to jurisdictional waters of the United States, and provided overarching guidance that the applicant utilized in developing the plan.

e) Draft Mitigation Plan and Comments

The final draft version of the plan was published on the web site of the U.S. Army Engineer Division, North Atlantic on December 1, 2004. This office received a total of 91 timely comment letters.[40]

This office received 15 letters supporting the streams and wetlands mitigation plan. Most of the letters indicated support because a successful plan will result in a net increase in wetland acreage, with additional benefits accruing from the inclusion of buffer and preservation areas surrounding the reservoir. Some commenters saw this plan as a major component of a pledge by the

[39] See minutes of April 10, 2003 Interagency Wetlands Mitigation meeting
[40] The comment period of the Streams & Wetlands Mitigation plan closed on February 1, 2005. The U.S. Environmental Agency did not provide written comments during this comment period.

Commonwealth of Virginia to restore 20,000 acres of wetlands in the Chesapeake Bay watershed.

The majority of the letters expressed opposition to the Streams & Wetlands Mitigation Plan, and contained the following major issues:

- Potential adverse impacts to archaeological sites;
- Significance of overall reservoir project impacts to waters of the United States;
- Proposed wetland mitigation is out of kind and/or is inadequate to compensate for project impacts;
- The probability for success of the plan is questionable.

Discussion of above comments: The Corps notes that the recently signed Programmatic Agreement pursuant to Section 106 of the National Historic Preservation Act prescribes appropriate measures for protection of historic and cultural resources, including Traditional Cultural Properties. The issue of project impacts to waters of the United States is a broader issue that is analyzed throughout this Record of Decision. As stated below in this section, in-kind mitigation for project impacts is not required under existing regulations and policy. Based upon a thorough review of the Streams & Wetlands Mitigation Plan, I find that successful execution of the plan would satisfy existing regulations and policies regarding mitigation by providing adequate compensation for project impacts, and that the plan has a high probability for success because it involves mostly restoration of formerly existing wetlands on approximately 80 percent of the 806 acres proposed for mitigation.

The issues raised by the U.S. Fish and Wildlife Service ("the Service") in its February 1, 2005 comment letter are:

a) The Service does not believe (i) that the Streams & Wetlands Mitigation Plan achieves the "no-net-loss" requirement because the currently proposed stream mitigation is insufficient and (ii) that Newport News must offer a greater amount of stream restoration.

b) The Service does not agree that the applicant's Streams & Wetlands Mitigation Plan adequately compensates for temporal wetlands value losses that would occur during the time period between wetland filling and the full functioning of the wetlands mitigation sites.

c) The Service indicated that The Nature Conservancy has purchased a conservation easement for one the properties described in the Streams & Wetlands Mitigation Plan and is negotiating to purchase a second easement on the same property plus a third easement on another property listed in the plan.

The permittee is being required to provide 806 acres of land for wetland restoration and creation.

d) The Service objects to both the water withdrawal and release conditions of the current state-issued Water Protection Permit/Water Quality Certificate and will likely seek more restrictive requirements when the permit is due for renewal in 2007.

The following analysis is a more detailed discussion of the issues and concerns:

a) (i) Discussion: The basis for the U.S. Fish & Wildlife Service stating that the mitigation plan does not achieve the "no net loss" requirement is predicated upon their belief that the mitigation plan does not sufficiently replicate the resource being lost. Specifically, most of an entire ecologically valuable and diverse watershed containing wetlands and streams would be dammed off and flooded, and that it would not be possible to replicate all of the wetland functions and values since the streams and wetlands mitigation plan involves multiple mitigation sites. The Service suggests that mitigation be undertaken wholly within a similar landscape feature as the one that the applicant proposes to utilize for reservoir construction.

Neither policy nor statutes require a mitigation site to fully replicate all impacted wetlands functions, nor do they require mitigation to be completely in-kind. According to Regulatory Guidance Letter No. 02-2, the objective of wetland mitigation is to provide, at a minimum, one-to-one functional replacement (i.e. no net loss of functions, with an adequate margin of safety to reflect anticipated success). It is virtually impossible, even on a much smaller scale, to create a wetland that fully replicates every single function of the wetland to be impacted. If a landscape feature similar to the King William IV Reservoir project area exists and if it were available to the applicant, it would be a practicable alternative for the reservoir's location. Such a site was not found nor discussed in the 1994 Draft Environmental Impact Statement, the 1995 Supplemental Draft Environmental Impact Statement nor the 1997 Final Environmental Impact Statement.

The applicant proposes wetland mitigation at a 2:1 acre-for-acre ratio for the 403 acres of wetlands that would either be filled or inundated from reservoir construction and inundation. Neither existing policy nor regulation mandates an increase in this acreage unless it is necessary to achieve the no net loss policy. As stated previously, the Corps of Engineers has determined that successful completion of the plan will meet all applicable wetland mitigation policies and, therefore, it is not necessary for the applicant to offer additional wetland creation acreage.

a) (ii) Discussion: Since the applicant does not have a similar landscape feature upon which to perform mitigation, they were required to seek other potential sites within the Pamunkey River sub-watershed.[41] Once no other potential sites could be found in the Pamunkey River sub-watershed, potentially suitable sites in the adjacent Mattaponi River sub-watershed were investigated, as agreed to by the U.S. Environmental Protection Agency and the U.S Fish & Wildlife Service.[42] Mitigation should occur as close to the impact area as possible and from a scientific standpoint it should involve as many large tracts of land as possible to minimize the number of sites necessary and to attempt to maximize the benefits that mitigation would provide within localized sub-watershed areas. The applicant's Streams & Wetlands Mitigation Plan follows this process, and includes contingency sites if any of the preferred sites must be excluded for any reason. All but one of the proposed sites are within the York River watershed (which includes the Mattaponi and Pamunkey River sub-watersheds). Corps of Engineers' policy and guidance does not automatically exclude an out-of-basin site from consideration.[43]

Some who submitted comments in 2001 state that the Virginia Department of Environmental Quality has a requirement for use of in-basin mitigation sites. As stated previously, the Department of Environmental Quality must approve a final mitigation plan as prescribed in the state-issued Water Protection Permit/Water Quality Certificate. The Corps of Engineers in consultation with the U.S. Environmental Protection Agency and the U.S. Fish & Wildlife Service will also approve the final mitigation plan.

The majority of the identified mitigation sites contain large areas of hydric soils and historically contained wetlands prior to human disturbance, such as clearcutting and farming. Wetland re-establishment is defined in Regulatory Guidance Letter No. 02-2 as the manipulation of the physical, chemical or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. From an ecological standpoint, this is the preferred method of wetlands mitigation because conditions were conducive in the past to the existence of wetlands before human disturbance, and if the human disturbance can be successfully undone, there is a high likelihood that the re-establishment efforts will ultimately restore the previously existing wetlands. Examples of work associated with re-establishment projects can include plugging of agricultural drainage ditches, reintroduction of natural flooding regimes, and stream relocations and diversions to increase water flow over a given area. This

[41] Regulatory Guidance Letter No. 02-2
[42] See minutes of April 10, 2003 Interagency Mitigation Meeting
[43] The site is located in the Rappahannock River Watershed and referred to as the Terrell Site. In 1999, the Norfolk District indicated it was acceptable for the applicant to search for sites in the Rappahannock River Watershed.

results in restoration of wetland hydrology, and over time hydric soils and hydrophytic vegetation would have a high probability of being re-established.

Stream mitigation has become a focal point in recent years in the Corps of Engineers Regulatory Program. At present, Corps of Engineers Headquarters is working with an interagency project delivery team under the umbrella of the National Mitigation Action Plan to develop a national policy for stream loss mitigation. As of the date of this Record of Decision, no final policy has been implemented. Similar to wetland mitigation, stream loss mitigation measures can include creation, restoration, enhancement or preservation. Also, streams are categorized as first, second or third order depending upon their position on the landscape. Until national policy is implemented, the review of stream mitigation proposals is governed by Part 2.d.5 of Regulatory Guidance Letter No. 02-2.[44]

The Streams & Wetlands Mitigation Plan calls for 1:1 stream restoration, 1.5:1 for enhancement, and 2.5:1 for preservation. The applicant arrived at this proposal after an extensive geographic search for feasible stream mitigation sites within the same U.S. Geological Survey Hydrologic Unit Cataloging Code as the project site.[45] The applicant has indicated that strict 1:1 restoration of 21 miles of stream would not be possible without including sites from outside the Pamunkey Cataloging Unit. The applicant's proposed stream restoration ratios are reasonable under existing regulations and policy.

In its February 1, 2005 letter commenting on the Streams & Wetlands Mitigation Plan, the U.S. Fish & Wildlife Service stated they find the proposed compensatory mitigation ratios to be too low, and seeks enhancement crediting at 2.5:1 or 4:1, and preservation at a 7.5:1 ratio as suggested in an April, 2003 guidance document titled "Stream Mitigation Guidelines".[46] The Guidelines' intent is to provide the regulated community of North Carolina with joint and consistent guidance from the U.S. Army Engineer District, Wilmington and the State of North Carolina Division of Water Quality.[47] The Corps of Engineers has not adopted the report's recommendations on a national basis, nor have national standards for stream mitigation been implemented. The U.S. Army Engineer District, Norfolk required a 1:1 mile-credit stream enhancement and restoration ratio as part of a permit issued in January 2004 for construction of the Rocky Pen Run Reservoir in Stafford County, Virginia; the applicant proposes a 1.7:1

[44] This portion of the Regulatory Guidance Letter states that in the absence of a functional assessment to determine stream functions, stream mitigation projects should generally replace at a 1:1 basis the stream length lost.
[45] Cataloging Unit 2080106—Pamunkey, from "Boundary Descriptions and Names of Regions, Subregions, Accounting Units and Cataloging Units" available from U.S. Geological Survey (http://water.usgs.gov/GIS/huc_name.txt)
[46] Guidelines published jointly by the Wilmington, North Carolina District of the Corps of Engineers, Region IV of the U.S. Environmental Protection Agency, the North Carolina Wildlife Resources Commission, and the North Carolina Division of Water Quality
[47] Ibid., p. 3

mitigation proposal in this case. This ratio is appropriate to the scope and degree of the project's anticipated impacts, in accordance with Title 33, CFR 320.4 § (r)(2).

b) Discussion: Temporal losses are a major concern to the U.S. Environmental Protection Agency and the U.S. Fish & Wildlife Service. These losses occur when there is a lag time between the loss of wetlands from filling and inundation, and the establishment of fully mature replacement wetlands. The impact of temporal losses can be ameliorated somewhat over time by requiring mitigation in excess of no net loss policy requirements. While there is an initial period of some loss of wetland functions and values, the loss is offset in the future by the increase in functions and values resulting from a successful mitigation plan that goes above and beyond the no net loss requirements. Other such measures could include a special permit condition requiring that the applicant commence mitigation site work and vegetation planting prior to the commencement of the reservoir project itself, and additional conditions tying the progress of reservoir construction to achievement of specific mitigation milestones. In this particular case, it will likely be many years before the wetlands in the reservoir area are completely inundated, and it is entirely possible that within that period most of the wetland mitigation sites will become mature and begin to perform their intended functions.

In a 1997 Technical Comment letter, the U.S. Environmental Protection Agency stated a 2:1 ratio would "...ensure adequate replacement of area-specific wetland functions" and "...achieves full functional replacement in a shorter time frame and allows for less than designed final function (per acre) in the event of partial failure." The applicant's project and mitigation plan concept have not changed significantly since then. The existing Streams & Wetlands Mitigation Plan meets the no overall net loss requirement, and satisfactorily addresses concerns over temporal losses because it includes additional wetland creation and restoration acreage that will over the long term offset temporal losses.

c) Discussion: The Nature Conservancy has indicated that they purchased an easement on a portion of the Meadow Farm site, and are negotiating to purchase a second easement on the same site along with a third easement on the Burlington property. According to the Conservancy and the U.S. Fish & Wildlife Service, the easements on the Meadow Farm mitigation site reduce the total wetlands created or restored to 743 acres, and the acreage for contingency site expansion by 10 acres. If the Conservancy purchases an easement on the Burlington mitigation site, the available restoration area will be reduced by 24 acres along with a 27-acre contingency site expansion loss. On this basis and the applicant's proposal to utilize an out-of-basin site (see discussion below), the Service believes the Streams & Wetlands Mitigation Plan will result is a net loss of wetlands and aquatic habitats in the York River Basin.

The Nature Conservancy raised a concern that only one of the proposed sites is under option for sale to the applicant. A Department of the Army permit does not convey property rights or exclusive privileges; the permittee would have the responsibility to acquire all necessary property rights to undertake their planned streams and wetlands mitigation activities.[48]

The Streams & Wetlands Mitigation Plan includes five contingency areas where the applicant estimates it can restore/create approximately 290 acres of wetlands, and the Department of the Army permit for this proposal will still require the applicant to create or restore no less than 806 acres of wetlands, regardless of whether the Meadow Farm, Burlington, or any other mitigation sites are available to the applicant. The applicant will be required to submit detailed plans for approval prior to the commencement of the project. Also Condition D. 2 of the state-issued Water Protection Permit/Water Quality Certificate requires the Virginia Department of Environmental Quality to approve a detailed final mitigation proposal

d) Discussion: As stated in Section 6 of this Record of Decision, the Virginia Department of Environmental Quality has already approved the Water Protection Permit/Water Quality Certificate and will determine the appropriate in stream flow regime for the Mattaponi River intake, along with the appropriate dam water release regime when the state-issued Water Protection Permit/Water Quality Certificate comes up for renewal in 2007.

In summary, we find that the applicant's Streams & Wetlands Mitigation Plan incorporates best science, is technically sound, and has an extremely high likelihood for success based upon inspections of each of the proposed mitigation sites and review of the conceptual wetland restoration and creation plans. It is consistent with relevant laws, and current regulations and policy. Wetlands functional analyses performed by the applicant and summarized in the Streams & Wetlands Mitigation Plan confirm that the plan achieves the no overall –net loss requirement.[49] Although the King William IV Reservoir project will result in a 437-acre loss of jurisdictional waters of the United States due to filling and inundation, the Streams & Wetlands Mitigation Plan will add 806 acres of new wetlands, at ecologically suitable locations on the landscape and mostly in areas where wetlands historically thrived. Additionally, the applicant will create, restore or preserve 36.4 miles of streams to mitigate the 21 miles of stream impacts. The Department of the Army permit will include special conditions requiring the City of Newport News Waterworks, the current applicant, to successfully execute the streams and wetlands mitigation proposals.

[48] Title 33, CFR § Part 320.4 (g)(6)
[49] Chapter 8 of Streams & Wetlands Mitigation Plan

8. Assessment of Need for Supplemental Environmental Impact Statement for this Permit Application Decision

On March 16, 1981, the President's Council on Environmental Quality published a memorandum to assist Federal agencies in their compliance with National Environmental Policy Act. This memorandum[50] included the 40 most frequently asked questions raised during implementation of the National Environmental Policy Act regulations. Question # 32 in this memorandum states that as a rule of thumb, if a proposal has not yet been implemented, federal Environmental Impact Statements that are more than five years old should be carefully reexamined to determine if the criteria of Title 40 CFR Part 1502.9 compel preparation of a Supplemental Environmental Impact Statement. This criteria in the regulations states that agencies shall prepare supplements to either draft or Final Environmental Impact Statements if:

- The agency makes substantial changes in the proposed action that are relevant to environmental concerns, or
- There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

The U.S. Army Engineer District, Norfolk filed the Final Environmental Impact Statement for this permit application in January 1997 and published the Notice of Availability of the Final Environmental Impact Statement in the January 24, 1997 issue of the Federal Register (62 FR 3682) for an initial 30-day comment period that they subsequently extended to 180 days.

Some recent commenters, notably the Southern Environmental Law Center by letter dated December 21, 2004 and the Institute for Public Representation of the Georgetown University Law Center by letter dated November 29, 2004, advised the U.S. Army Engineer Division, North Atlantic to prepare a Supplemental Environmental Impact Statement for this permit application decision. They both argue that the applicant's project has been substantially changed because the Commonwealth of Virginia issued permit for the raw water intake in the Mattaponi River at Scotland Landing, Virginia prohibits river water withdrawals during the period March 1st through July 31st of each year.

We believe this Commonwealth-issued permit and its associated restriction on raw water withdrawals between March 1st and July 31st of each year has not resulted in a material alteration of the scope of work within Department of the Army regulatory jurisdiction. The applicant's project always contained the raw water intake at this location, and its impacts were assessed in the Corps of

[50] Federal Register, 46 FR 18026

Engineers' Final Environmental Impact Statement. In fact, the Commonwealth-issued permit modified the applicant's operation and design of the raw river water intake structure to reduce water intake velocities to provide additional protection to American shad and other anadromous fish species from entrainment and impingement. The seasonal prohibition on raw river water withdrawals avoids adverse impacts to early life stages of American shad during spring and early summer months, except under extraordinary circumstances during a drought emergency declared by the Governor of the Commonwealth of Virginia or the President of the United States.[51] As a result, the state's action results in fewer impacts than previously considered in the 1997 Final Environmental Impact Statement.

In compliance with the National Environmental Policy Act regulations, the Corps of Engineers has carefully reexamined the Final Environmental Impact Statement. The applicant has not made, nor has the Corps of Engineers required, any substantial changes in the scope of the applicant's project within Department of the Army jurisdiction that increase adverse environmental impacts. What has changed is that the applicant's project now includes a detailed, coordinated, streams and wetlands mitigation plan to compensate for the loss of aquatic areas from the constructed reservoir. The plan provides for a no net loss of wetland values. The applicant's project also now includes procedures for identification and protection of cultural and historic resources, including Traditional Cultural Properties. Reduced water intake velocities and the seasonal raw water withdrawal restriction are not adverse changes, but reduce further the environmental impacts as described in the Final Environmental Impact Statement. The Final Environmental Impact Statement considered the expected potential impacts on fishery resources from the original intake design. These impacts will be less than those previously discussed because of the requirements of the state-issued permit for the Mattaponi River intake structure.

I find that the changes that have occurred in the applicant's project since the Final Environmental Impact Statement was filed in January 1997 do not constitute significant new circumstances or information. These changes are measures that minimize the environmental impacts previously identified in the 1997 Final Environmental Impact Statement. Consequently, I have determined that there is no need to prepare a Supplemental Environmental Impact Statement.

[51] See Condition (19)(c) of Virginia Marine Resources Commission Permit # 93-0902

9. Discussion of Conformity with the Section 404 (b)(1) of the Clean Water Act Guidelines:

The proposed work would involve discharges of fill material into waters of the United States to construct the proposed dam, to backfill pipeline trenches, to construct a riprap outfall apron and to perform mechanized landclearing activities in jurisdictional waters of the United States. Therefore, the physical, chemical and biological effects of these activities must be evaluated in accordance with the Section 404 (b)(1) of the Clean Water Act Guidelines, published in the Federal Register on December 24, 1980. Below is the sequential analysis prescribed by Title 40, CFR § 230.5 to evaluate whether the proposed discharge sites may be utilized.

i) Application of Nationwide General Permit #12

It should be noted that discharges of backfill into pipeline trenches in waters of the United States, construction of a riprap outfall apron, and intake construction is work that has minor impacts. As such, the applicant need only comply with the terms and conditions of Nationwide General Permit #12. The same standards also apply to any mechanized landclearing activities in conjunction with pipeline installation.

ii) Landclearing within the Reservoir Area

With regard to any mechanized landclearing that may occur within the proposed reservoir area, it does not appear that extensive analysis is necessary to demonstrate compliance with the Guidelines. Any areas that would undergo mechanized landclearing in the reservoir area would be permanently hydrologically modified once the reservoir becomes operational. These are unavoidable secondary impacts of discharges of fill material associated with dam construction.

a) Examination of Practicable Alternatives to the Proposed Discharges (Subpart B, Title 40, CFR § 230.10 (a))

I find that the analysis of alternatives in the Final Environmental Impact Statement provides sufficient information regarding alternatives to be evaluated under these Guidelines, consistent with the provisions of Title 40, CFR § 230.10 (a)(5). Readers are referred to the Final Environmental Impact Statement for a comprehensive examination of practicable alternatives to the proposed discharge. Based upon the analysis presented in the Final Environmental Impact Statement, I conclude that the proposed King William IV Reservoir project is the least environmentally damaging practicable alternative. It results in fewer adverse impacts to the aquatic environment than all but the Black Creek

Reservoir alternative. I find that the Black Creek Reservoir alternative is not reasonably available because Commonwealth of Virginia law requires that the applicant would have to reach an agreement with New Kent County in order to build the reservoir. It is not appropriate to conclude this site can be obtained, utilized or managed by the applicant because on June 13, 2005 the Board of Supervisors of New Kent County adopted an ordinance to approve an application by New Kent Farms, LLC to rezone 2,520 acres of land within the basin of the Southern Branch of Black Creek to Planned Unit Development.[52] According to Mr. George Homewood, Director of Community Development for New Kent County, development of the site would foreclose upon the possibility of the Black Creek Reservoir being constructed.[53] Because of the Board's action, the Black Creek Reservoir is not a practicable alternative as defined in Title 40, CFR § 230.10 (a)(2).

b) Delineation of Candidate Disposal Site (Subpart B, Title 40, CFR § 230.11 (f))

No dispersal of the proposed fill material is anticipated to occur. Therefore, determination of mixing zone acceptability is not applicable in this case.

c) Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C, Title 40, CFR § 230.20-230.25)

I concur with and adopt the Norfolk District's determination, with one exception, on Pages 315-318 of the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 (discussion of Substrate, Suspended Particles/Turbidity, Water, Current Patterns and Water Circulation, Normal Water Fluctuations and Salinity Gradients). The exception is with respect to adverse salinity effects in the Mattaponi River, which could result from withdrawal of water. Since the available information indicates that potential salinity changes which may result from withdrawal of water would generally be within the natural salinity fluctuation of the estuarine system, it is reasonable to conclude that the potential impacts from salinity changes in the Mattaponi River would be minor. Additionally, the state-issued permit for intake construction contains measures to minimize adverse impacts, including a seasonal restriction on water withdrawals between March 1st and July 31st of each year.

[52] p. 2 of Ordinance O-09-05(R3) adopted on June 13, 2005
[53] Personal conversation with Mr. Homewood on July 6, 2005

d) Potential Impacts on Biological Characteristics of the Aquatic Ecosystem (Subpart D, Title 40, CFR §230.30-230.32)

i) Threatened and Endangered Species

The Norfolk District has successfully concluded required consultation with the U.S. Fish & Wildlife Service pursuant to Section 7 of the Endangered Species Act. This has resulted in a Biological Opinion containing recommendations for protection of the endangered plants, sensitive joint-vetch and small whorled pogonia. As discussed in Section 6 of this Record of Decision, special permit conditions are included as reasonable and prudent measures to minimize adverse impacts to these plants.

ii) Fish, Crustaceans, Mollusks, and other aquatic organisms and wildlife

The proposed impoundment would result in a significant alteration of the natural ecosystem in Cohoke Creek. However, the applicant will be required periodically release water and sediment from the impoundment to mimic natural flows and sediment deposition in the downstream portion of the creek. The release of water from a dam to accommodate the needs of fish and wildlife is specifically mentioned at Title 40, CFR § 230.77 (b) as an action to minimize adverse effects. Additionally, special permit conditions require successful implementation of the applicant's Streams & Wetlands Mitigation Plan ensuring no net loss of wetland functions and values. I find that the combination of these measures would satisfactorily offset adverse effects from the proposed discharges of fill material.

e) Potential Impacts on Special Aquatic Sites (Subpart E, Title 40, CFR § 230.40-230.45)

I concur with and adopt the Norfolk District's determination on Pages 321-322 of the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, that no impacts are expected to occur to any special aquatic sites except wetlands. As stated previously in this document, the proposal is expected to have a major, long-term impact upon wetlands. However, successful implementation of the Streams & Wetlands Mitigation Plan will result in no net loss of wetland functions and values, and satisfactorily offset the adverse impacts of the proposed fill discharges. Additionally, salinity effects are expected to be within the normal range of variability and are not expected to result in adverse impacts to special aquatic sites or federally threatened plant species.

f) Potential Effects on Human Use Characteristics (Subpart F, Title 40, CFR §230.50-230.54)

i) Water Supplies

The purpose of the proposed discharges is to create a new potable water supply system. No discharges of fill material are proposed into the reservoir itself once it becomes operational.

ii) Recreational/Commercial Fishing & Water Recreation

As stated previously, potential changes to salinity in the Mattaponi River would be within natural variability, and as such the proposed intake construction is not expected to adversely affect recreational and commercial fisheries in the river. The reservoir pool would provide over 1,500 acres of habitat for various forage and game fish species. Aesthetic impacts are discussed elsewhere in this Record of Decision. It is reasonable to conclude that the creation of the impoundment plus successful completion of wetland mitigation measures would satisfactorily compensate for potential effects of this proposal upon human use characteristics. No impacts are expected to occur to parks, national seashores, wilderness areas, research sites and similar preserves. Mitigation measures are prescribed for impacts to historical monuments.

g) Evaluation and Testing (Subpart G, Title 40, CFR § 230.60-230.61)

I concur with the Norfolk District that the proposed fill material is not likely to be a carrier of contaminants and as such there is no need to perform chemical, biological and physical evaluations and tests on the material.

h) Actions to Minimize Adverse Effects (Subpart H, Title 40, CFR § 230.70-230.77)

With the exception of the discussion of Other Actions (40 CFR § 230.77), I concur with the discussion on Pages 325-327 of the Norfolk District's Recommended Record of Decision to the Division Engineer, dated July 2, 2001, which lists a number of actions that the applicant would implement to minimize adverse effects, during both construction and operation of the reservoir.

i) Actions Affecting Plan and Animal Populations: Regulatory Guidance Letter No. 02-2 does not mandate full functional replacement of each individual wetland value or function that would be lost from implementation of the project. A special permit condition is being included to require the applicant to successfully complete the Streams & Wetlands Mitigation Plan, which would result in no net loss of wetland functions and values in accordance with current Regulatory

Program policy. Incorporation of wetland mitigation measures into the overall project satisfactorily compensates for anticipated adverse effects to special aquatic sites.

ii) Other Actions—40 CFR § 230.77 (b): The applicant proposes a below-dam water release regime to accommodate the needs of fish and wildlife. As stated in Section 7 of this Record of Decision, the Virginia Department of Environmental Quality will determine the appropriate water release regime when the state-issued Water Protection Permit/Water Quality Certificate comes up for renewal in 2007.

iii) Other Actions—40 CFR § 230.77 (d): Construction of the proposed dam will transform the current, ecologically diverse Cohoke Creek ecosystem into an open lake with a wetland fringe surrounded by buffer lands. The new ecosystem would have different functions and values as compared to the existing one. The proposed Streams & Wetlands Mitigation Plan would substantially benefit a larger portion of the Chesapeake Bay watershed via the restoration and creation of no less than- 806 acres of wetlands and permanent preservation of over 5,000 acres on wetlands, streams and uplands.

i) Factual Determinations (Subpart B, Title 40, CFR § 230.11)

A) Physical Substrate Determinations: The proposed discharge of fill material for the King William IV Reservoir project's earthen dam would result in the permanent loss of approximately 6.1 acres of freshwater wetlands. Additional acreage would be impacted by mechanized landclearing activities within the proposed reservoir; however, the entire 1,526-acre substrate in the reservoir pool would be permanently altered due to inundation after the reservoir is built. A small portion of the Mattaponi River substrate would be altered by installation of the intake structure. Substrate impacts resulting from pipeline installation would be transient and minor in nature, since the applicant will be required to backfill these areas to their original grades after construction.

B) Water Circulation, Fluctuation, and Salinity Determinations: The proposed discharge of fill material for the King William IV Reservoir project's earthen dam would directly result in a major, long-term alteration of downstream flows and in the normal water fluctuation in Cohoke Creek. Water temperatures in the impounded area would be higher than in the current stream and wetland ecosystem in the Cohoke Creek valley. It should be noted, however, that the Commonwealth of Virginia extensively considered these and other potential impacts of reservoir construction, and their Water Protection Permit/Water Quality Certificate authorizing construction of the reservoir contains special conditions aimed at reducing the direct and indirect impacts of reservoir construction upon the creek to maximum extent practicable. As indicated in

subparagraph c) of this section of this Record of Decision, no appreciable changes are expected in the salinity regime of the Mattaponi River. Additionally, as indicated in Section 1, subparagraph a) of this Record of Decision, the amount of water to be withdrawn from the Mattaponi River is only a small fraction of the daily ebb and flood volume of the river. Because of this, no appreciate impacts are anticipated to the normal water fluctuation in the river

C) Suspended Particulate/Turbidity Determinations: Construction of the King William IV Reservoir project's earthen dam itself is expected to result in only minor, temporary turbidity in Cohoke Creek. Potential impacts will be reduced through use of standard construction procedures and turbidity control measures. There would also be minor, temporary turbidity in the reservoir when it is initially inundated, because of suspension of particulates, particularly in areas that experience soil disturbance through mechanized land clearing. These particles will subsequently settle to the bottom.

D) Contaminant Determinations: The proposed construction fill material will be required to be free of contaminants, thus no impacts in this regard are expected.

E) Aquatic Ecosystem and Organism Determinations: The proposed King William IV Reservoir project would result in the permanent loss, via filling, of approximately 6.1 acres of freshwater wetlands and the hydrologic alteration of approximately 403 acres of freshwater wetlands in the Cohoke Creek basin. This inundation of wetlands would have a major, long-term adverse impact upon the current functions of the aquatic ecosystem. I find that there is a significant public need for the project, with no practicable alternatives, and that there is sufficient mitigation to minimize and reduce the expected adverse impacts of the project.

F) Determination of Cumulative and Secondary Effects on Aquatic Ecosystem: There are no additional projects of this scope or magnitude anticipated in the project area. Therefore, no cumulative impacts are expected to occur. Secondary impacts to wetlands downstream of the proposed dam are addressed in the state-issued Water Protection Permit/Water Quality Certificate. Successful implementation of the Streams & Wetlands Mitigation Plan is expected to result in positive secondary impacts to the Chesapeake Bay watershed because of the net increase in wetland acreage and stream restoration, preservation and enhancement. The preservation of almost 5,300 acres of land will also benefit the Chesapeake Bay watershed.

j) Findings of Compliance or Non-Compliance with the Restrictions on Discharge (Subpart B, Title 40, CFR § 230.12 (a)(2)

I find that the proposed disposal sites for the discharges of fill material associated with the King William IV Reservoir project, with the inclusion of appropriate and

practicable means to minimize the adverse effects of the proposed discharges (see subparagraph h) above, comply with the requirements of these Guidelines. The following conclusions support this finding:

A) There are no reasonably available (in light of Title 40, CFR § 230.10 (a)(2)) practicable alternatives to the proposed discharges of fill material which would have fewer adverse impacts on the aquatic ecosystem (Title 40, CFR § 230.10 (a));

B) The proposed discharges of fill material will not contribute to violations of any applicable state water quality standard (Title 40, CFR § 230.10 (b)(1));

C) The proposed discharges of fill material will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act (Title 40, CFR § 230.10 (b)(2));

D) The proposed discharges of fill material will not jeopardize the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or result in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce to be a critical habitat under the Endangered Species Act;

E) The proposed discharges of fill material do not violate any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972;

F) The net effect of the proposed discharges of fill material, inclusive of compensatory mitigation, will not cause or contribute to significant degradation of waters of the United States. This determination is based upon successful implementation of the Streams & Wetlands Mitigation Plan that results in no net loss of wetland functions and values;

G) All appropriate and practicable steps have been identified to minimize potential adverse impacts of the proposed discharges on the aquatic ecosystem.

H) There exists sufficient information to make a reasonable judgment that the proposal complies with the Guidelines.

10. <u>Analysis of Public Interest Evaluation Factors</u>:

The following public interest factors, as listed in Title 33, CFR § 320.4 (a), are to be considered in the Corps of Engineers' public interest review process:

a) Conservation

Conservation issues are discussed below in subparagraph (m), Water Supply & Conservation.

b) Economics

Notwithstanding disagreements by some experts about when exactly the additional new water supply will be needed, I find that the construction of a reservoir is necessary to provide a dependable, long-term water supply for the Lower Virginia Peninsula, in a manner that is not contrary to the public interest. The Corps of Engineers' Institute for Water Resources affirmed the risk of water shortage between 2015-2030. This is further discussed in subparagraph m) of this section. I find that other alternatives are not practicable to ensure a stable, uninterrupted, safe supply of water for community needs and human health, to ensure that the project area maintains its current economic base, and meets the Commonwealth of Virginia's objective of attracting new business and additional employment opportunities to the Lower Virginia Peninsula. Discussion of alternatives and the public need for the project is presented in subparagraph m) of this section.

The currently proposed 1,526-acre King William IV Reservoir project would involve the lowest cost per million gallons per day of all except one reservoir alternative[54] carried forward in the Final Environmental Impact Statement past the initial practicability screening analysis. That alternative was subsequently found to not be practicable for other reasons specified in the Final Environmental Impact Statement. The safe yield of water from the King William IV Reservoir project would still be provided at the lowest cost to the public, as compared to other reservoir alternatives carried forward in the Final Environmental Impact Statement. Any increases in water rates associated with reservoir construction would be unavoidable in the absence of alternative sources of funding. Although Newport News Waterworks customers may experience some small increase in water cost, this project is expected to have an overall beneficial impact on the economy of the project area.

As stated in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, the estimated total cost of the proposed reservoir system would be $167.5 million. The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 also indicates that the Newport News City Council had expended or approved $17 million for planning, engineering and legal fees. The

[54] See Table 3-3 of January, 1997 Final Environmental Impact Statement

current total cost of the project is now expected to exceed $200 million with the inclusion of ecological and cultural resource mitigation requirements.

c) Aesthetics

The project would result in the creation of an approximate 1,526-acre reservoir in an area containing large expanses of wetland and upland forests along with palustrine scrub-shrub and emergent wetlands and farmland. Additional long-term aesthetic impacts would also occur as a result of the other construction activities associated with this project. However, since aesthetics is a highly subjective issue, the perception as to whether or not the project would result in a net positive or negative impact is based on individual preferences of the aesthetic appeal of a large expanse of open water versus the existing conditions on the site. It should be noted that these impacts are largely unavoidable and cannot be mitigated.

d) General Environmental Concerns

A general concern has been expressed regarding the presence of an abandoned landfill, which would lie above the normal pool of the proposed reservoir. The applicant would be required to follow any Commonwealth of Virginia laws and regulations to address this issue as part of this project. It is reasonable to believe that this landfill, or any similar areas which may be identified in the project area, would be properly managed by the applicant so as to not result in any long-term adverse impacts upon the reservoir and/or the human environment. It is also reasonable to believe that the City of Newport News will take all necessary measures to ensure no leachate from this landfill enters the reservoir. This is discussed in Section 5.2.3 of the Final Environmental Impact Statement.

Specific concerns relative to wetland impacts, impacts to federally endangered and threatened species, and fish and wildlife values are discussed elsewhere in this document.

e) Effects on Wetlands (including wetland mitigation)

The project would result in the direct loss of approximately 6.1 acres of freshwater wetlands as a result of dam construction, and temporary impacts to approximately 10.4 acres of wetlands and streams in conjunction with installation of water conveyance pipelines. Installation of these pipelines will comply with best construction and management practices, including special conditions of Department of the Army Nationwide General Permit No. 12. Impacts to wetlands would be temporary and affected areas would eventually revert to functional wetlands.

Further, approximately 403 acres of freshwater wetlands and approximately 34 acres of streams and open water would be permanently inundated within the proposed reservoir pool. It is important to note these areas would not be directly impacted by the regulated discharge of fill material; they would experience secondary impacts resulting from modification of their current aquatic functions.

The wetlands in the project area perform functions important to the public interest as defined at Title 33, CFR § 320.4 (b)(2). Specifically, the alteration of these wetlands would detrimentally affect environmental characteristics such as natural drainage and sedimentation patterns, and these wetlands serve significant natural biological functions. They also partially consist of groundwater discharge areas that maintain minimum base flows important to aquatic resources.

The Department of the Army Regulatory Program mitigation policy is embodied in a Joint 1990 Memorandum of Agreement with the U.S. Environmental Protection Agency. The Memorandum of Agreement mandates appropriate and practicable compensatory mitigation as the last of a sequential three-step process. First an applicant must demonstrate that it is not practicable to avoid regulated waters or wetlands. Second, an applicant must demonstrate that the unavoidable impacts to waters and to wetlands have been minimized to the maximum extent practicable. Only then does the applicant present mitigation for the aquatic impacts. While the Joint 1990 Memorandum of Agreement expresses a preference for at least one-for-one functional replacement, there is also recognition that this may not always be appropriate or practicable. The King William IV Reservoir project has been subjected to this three-step examination in the environmental impact statement process, before submitting their Streams & Wetlands Mitigation Plan.

The applicant's Streams & Wetlands Mitigation Plan details a proposal to restore or create 806 acres of wetlands, and lists contingency sites on which an additional 297 acres of mitigation can occur. Restoration activities are proposed for approximately 80 percent of the 806 acres. Wetland restoration is generally considered preferable to wetland creation, since wetland restoration efforts are often simple and have a high rate of success in restoring wetland functions. Wetland creation sites may involve vegetation removal, earthwork, and planting of new vegetation that can take years to mature, especially for forested wetlands.

In addition to the wetland creation/restoration components of the mitigation effort, the applicant proposes to preserve 400 acres of existing wetlands, and 1,170 acres of upland habitat adjacent to the mitigation sites. A 1,300-acre buffer zone around the King William IV Reservoir would also be preserved and allowed to grow into a mature hardwood forest, and another 600 acres surrounding the buffer zone would be protected by a 100-foot wide construction setback perimeter. In this area, some clearing may occur but development would be

strictly limited. These preservation and buffer areas cannot be counted toward the amount of necessary wetland mitigation to achieve the no net loss goal; however, it is appropriate to keep these in mind in evaluating the entire mitigation proposal. It is also appropriate to examine these factors within the context of post-reservoir construction watershed management in Cohoke Creek.

f) Historic, Cultural, Scenic & Recreational Values

The administrative record documents that the Corps of Engineers has carefully considered the potential impacts of this project upon three Native American tribes (the Mattaponi, Upper Mattaponi and Pamunkey) and their cultural values. Although these three tribes are not federally recognized, the Corps of Engineers has afforded them the same level of treatment in the permit application process as if they were federally recognized. The permit applicant has engaged the tribes in project discussions since an early stage in the permit application process.

It should be noted that the proposed project would not encroach upon any of the reservation lands of the above named tribes, or any other tribal property. At their closest points, the 1,200-acre Pamunkey Reservation is 3.3 miles northeast of the King William IV Reservoir site and within two miles of the proposed pipeline leading to the Diascund Creek Reservoir. The 150-acre Mattaponi Reservation is 5.5 river miles and three land miles downstream of the proposed Mattaponi River intake structure, and is 1.7 miles east of the proposed reservoir.

The ancestral homeland and non-reservation holdings of the Upper Mattaponi totaling 32 acres are eight miles west of the proposed reservoir. These sites are all within King William County. The Mattaponi Reservation contains approximately 65 residents, while approximately 450 other members do not reside on the reservation, and the Pamunkey Reservation has approximately 75 residents. These are the only two Native American Reservations in the Commonwealth of Virginia.

The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 contains a discussion relative to the significance of the Mattaponi River to the tribes. A portion of this discussion describes the spiritual and religious aspects of the Mattaponi River to the Mattaponi Tribe. They assert that any disruption of the river and its flow would harm its sacred uses and dishonor the tribe's ancestors.

However, the Final Environmental Impact Statement[55] indicates there is an existing intake on the river for the Ruther Glen Plant of Smith Sand & Gravel, upstream of the proposed intake location for the King William IV Reservoir project. There are also two existing major reservoirs in the Mattaponi River basin (Lake Caroline and the Ni Reservoir). The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 indicates that flow is also being diverted from the Mattaponi River for agricultural irrigation. Industrially used groundwater is pumped into the Mattaponi River further downstream in the estuary. These factors, singularly and cumulatively, presently disrupt the flow of the river.

Concerns are also expressed regarding the potential impacts of salinity changes upon fishery resources, resulting from raw water withdrawals from the Mattaponi River. Mattaponi tribe members use the river for subsistence fishing. Information available from the Commonwealth of Virginia-issued Section 401 of the Clean Water Act Certificate and in the Final Environmental Impact Statement indicates the predicted salinity change would be minor and within natural variability. I find it reasonable to conclude that there would be no foreseeable substantial salinity change and the impacts upon fishery resources in the river would be minimal.

The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 stated that the tribes cannot be fully compensated for the losses to their spiritual connections, culture and traditional socioeconomic practices they would experience as a result of this project, and utilizes this rationale as one reason for the recommendation of permit denial. There is, however, no requirement in the Regulatory Program to fully compensate any party for losses that may result from an approved project. Mitigation can be required under Title 33, CFR Part 320.4 (r) for significant resource losses that are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment. Mitigation includes avoiding, minimizing, rectifying, reducing, or compensating for resource losses, and is an important aspect of the public interest review and balancing process.

The applicant proposes a number of other mitigation measures, as described in the Regional Raw Water Study Group 's Comments dated October 2001 on the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001. In the absence of standard practices to be used as a blueprint, Title 33, CFR Part 320.4 (r) requires mitigation measures that are reasonable and appropriate to the scope of the project. The recently signed Programmatic Agreement contains reasonable and appropriate mitigation measures for cultural and historic resource impacts.

[55] See Appendix III, Report O, Volume II

The applicant has further mitigated potential adverse effects by reducing the size of the proposed reservoir, thereby leaving intact more lands for hunting and gathering activities by Native Americans, and reducing the archaeological sites that would be inundated.

The U.S. Army Engineer Division, North Atlantic, the President's Advisory Council on Historic Preservation, the Commonwealth of Virginia Department of Historic Resources, the applicant and consulting parties, have signed a Memorandum of Agreement (MOA). This satisfactorily concludes the Corps of Engineers' consultation requirement pursuant to Section 106 of the National Historic Preservation Act of 1966. The MOA contains stipulations for identification and treatment of archaeological sites, historic buildings, structures and landscapes, including Traditional Cultural Properties in the area of potential effect.

g) Fish & Wildlife Values

The administrative record indicates the Norfolk District properly coordinated with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Virginia Department of Game & Inland Fisheries; all three agencies are charged with conservation of fish and wildlife resources. In its May 1, 2001 letter, which contained its final comments relative to this project, the U.S. Fish and Wildlife Service supported the Norfolk District Engineers recommended denial of a Department of the Army permit for the proposal, indicating its belief that the project would result in substantial and unacceptable impacts to aquatic resources of national importance, namely the Cohoke Mill Creek and Mattaponi and Pamunkey Rivers.

The U.S. Fish and Wildlife has reserved its right to request that the Assistant Secretary of the Army for Civil Works review a decision that is contrary to its recommendation. Their right to do so was originally established in a June 13, 1994 letter from the Regional Director. This procedure is in accordance with the Memorandum of Agreement between the Department of the Army and the Department of the Interior pursuant to Section 404 (q) of the Clean Water Act.

The U.S. Environmental Protection Agency expressed concerns with respect to the filling and inundation of wetlands; elimination of streams; adverse impacts to an additional 186 acres of wetlands downstream of the proposed dam; potential impacts to the federally threatened sensitive joint-vetch on the Mattaponi and Pamunkey Rivers; potential alteration of freshwater tidal zones in the Mattaponi and Pamunkey Rivers; loss of habitat and impacts to the small whorled pogonia within the proposed reservoir; loss of 761 acres of riparian habitat; disruptions to migratory bird nesting; and stream channel and wetland erosion and destabilization in Beaverdam Creek, which is to be used as a conveyance

channel for water being transported from the proposed reservoir to the existing Diascund Reservoir.

The project is expected to result in individual and cumulative effects upon fish and wildlife values through transformation of a stream valley wetland complex into an open water area. I expect some of these effects to be negative. However, these effects would be offset by benefits expected to accrue from creation of the reservoir and successful implementation of the Streams & Wetlands Mitigation Plan that also describes land preservation and management plans. Approximately 5,300 acres of land would be preserved or ecologically improved, including the reservoir, the buffer areas around the reservoir, and the streams and wetlands restoration areas. The preservation and improvements to these lands would provide a long-term benefit to the adjacent areas and the Chesapeake Bay aquatic ecosystem. Additionally, as discussed in Section 6 of this Record of Decision, several special permit conditions will be included requiring the applicant to implement conservation measures described in the U.S. Fish & Wildlife Service's Biological Opinion letter of February 2, 1998.

The latest comments received from the National Marine Fisheries Service were in a letter dated March 12, 1996, commenting on the Supplemental Draft Environmental Impact Statement. They stated that significant impacts to anadromous and semi-anadromous fish populations in the Mattaponi and Pamunkey Rivers and Cohoke Creek would not be acceptable. They also recommended the use of 1.0-millimeter wedge wire screens with intake velocities not to exceed 0.25 feet per second; the applicant has since accepted these parameters. They also expressed concerns regarding reduced stream flow in Cohoke Creek and increased stream flow in Beaverdam Creek, recommending that the proposed outfall in Beaverdam Creek be relocated into the Diascund Reservoir.

These issues relative to the Mattaponi River intake structure and reduced stream flow in Cohoke Creek are adequately addressed by special conditions of the Commonwealth of Virginia Water Protection Permit/Section 401 of the Clean Water Act Water Quality Certificate issued by the Commonwealth of Virginia Department of Environmental Quality on December 22, 1997 and modified on December 22, 2002. These conditions, which are incorporated into the Department of the Army permit, mandate a more restrictive minimum in stream flow for the Mattaponi River and increased discharges from the proposed King William IV Reservoir pool downstream in Cohoke Creek, as compared to the applicant's original proposal. Specifically, withdrawals from Mattaponi River would be governed by the "Modified 80 percent Exceedence" flow by method, whereas the applicant originally proposed the "40/20 Tennant Minimum In Stream" flow-by method. The Final Environmental Impact Statement refers to the Modified 80 Percent Monthly Exceedence Minimum In-Stream Flow

Requirement as the monthly flow rate that has the probably of being exceeded 80 percent of the time during the period of record. The 40/20 Tennant (Montana) Method is another in-stream flow assessment method that allows withdrawals when the flow exceeds 20 percent of the mean annual flow during periods that are not critical to fisheries, and 40 percent of the flow during critical periods. Under the 40/20 Tennant Method water can be withdrawn more frequently unless there is an extreme drought. Subparagraph k) of this section includes a discussion relative to the Beaverdam Creek outfall.

In their 23 June 2005 letter to the North Atlantic Division Commander, the U.S. Fish & Wildlife Service raised the issue of potential methyl mercury contamination in fish. This issue is addressed in subparagraph n) of this section.

h) Flood Hazards/Floodplain Values

Construction of the King William IV Reservoir project will change the existing landscape and, correspondingly, flood hazards and floodplain values. No appreciable impacts are expected in areas in which non-reservoir components are proposed. Areas between the proposed King William IV Reservoir project's earthen dam and the existing Cohoke Mill Creek dam would benefit from being less flood-prone. The proposed reservoir would flood 1,526 acres of land but since this area is not currently inhabited, I find no adverse flooding or impacts to floodplain values are expected. Therefore, the requirements of Executive Order No. 11988 issued May 24, 1977; "Floodplain Protection" are met for this project.[56]

i) Land Use

Land use patterns in the project area have not appreciably changed since the Final Environmental Impact Statement was filed in January 1997. Discussion of land use can be found at pages 217-218 in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001. I concur with and adopt the Norfolk District's findings on this factor and thereby incorporate by reference the analysis cited in the preceding sentence. The proposed King William IV Reservoir project is not expected to result in substantial changes to the current rural and agricultural farmland setting of the project area, both on an individual and cumulative basis. The required reservoir buffers and mitigation areas will provide long-term benefit to the adjacent area and the Chesapeake Bay watershed.

[56] Federal Register, 42 FR 26971

j) Navigation

The only work in navigable water would be the proposed intake structure on the Mattaponi River. This part of the river is currently used by a small number of recreational vessels and there is no designated federal navigation channel. The applicant is being required via a special permit condition to submit a plan to install marker buoys to protect the intake structure and to minimize potential adverse impacts to the sensitive joint-vetch plant, a federally endangered plant species. No appreciable individual and cumulative impacts to navigation are expected to occur.

k) Erosion & Accretion

Standard erosion control practices will be utilized during construction, and adverse impacts to aquatic resources will be then minimized or avoided. Any long-term impacts from erosion along the edge of the reservoir would be minor and localized. The impoundment would prevent sediment from being transported downstream into Cohoke Creek. No substantial adverse impacts are expected to occur to the sensitive joint-vetch plant since erosion and accretion patterns in the Mattaponi River are not expected to be substantially altered from construction and operation of the intake, and marker buoys will be installed to keep vessels and their wakes away from the shoreline.

The National Marine Fisheries Service and the U.S. Fish & Wildlife Service raised concerns regarding potential erosion at the water conveyance pipeline discharge site. The Corps of Engineers notes that it will contain a riprap apron that will dissipate water velocities and minimize the risk of erosion. During periods of high water velocities, some erosion in and along Beaverdam Creek may occur; however, the impacts would be localized. Any suspended sediments would be transported into the existing Newport News Waterworks Diascund Reservoir. Therefore, it is not necessary to require the applicant to relocate the outfall into Diascund Reservoir, as recommend by both agencies.

The state-issued Water Protection Permit/Water Quality Certificate requires a water release regime at the dam site to mimic existing flows and sediment transport to the downstream aquatic ecosystem in Cohoke Creek.

l) Recreation

Construction of the King William IV Reservoir project is expected to have a beneficial effect upon recreation. Its waters could be utilized for swimming, and recreational fishing and boating. Construction of the reservoir would also result in reduction in the available area for hunting. There would be an overall net change in the recreational characteristics of the area; whether this is positive or

negative is subjective depending upon individual preferences. It should be noted there would still be a large area of land available for hunting, whereas increased swimming, boating and fishing opportunities would not materialize if the reservoir was not constructed.

m) Water Supply and Conservation

The U.S. Army Engineer District, Norfolk began examining Lower Virginia Peninsula water supply needs approximately 30 years ago, and their 1984 Hampton Roads Study Feasibility Report and Final Environmental Impact Statement stated that the region would need an additional 56 million-gallon-per-day of dependable water supply by 2030 to avoid mandatory water use restrictions. The report recommended a planning requirement of 40 million-gallons-per-day to avoid water rationing, but not periodic mandatory water use restrictions.[57] The permit applicant, the City of Newport News, Virginia recognized that developing new potable water supplies for the Lower Virginia Peninsula required a collaborative regional effort. This led to their formation of the Regional Raw Water Study Group.

In the Final Environmental Impact Statement, 31 alternatives are assessed to meet the need for the required new reliable delivery capacity of 40 million-gallons-per-day in the year 2040.[58] The applicant's proposed project was one option, with a treated safe yield of 23 million-gallons-per-day. Presently, the applicant reports that the seasonal raw water withdrawal restriction from the Mattaponi River imposed in the state-issued intake permit reduce the safe yield to 19 to 20 million-gallons-per-day. The other three non–reservoir alternatives included:

- Additional conservation measures and use restrictions, which reportedly would save 7.1 to 11.1 million-gallons-per-day;
- New development of fresh (versus brackish) groundwater resources, which would add 4.4 million-gallons-per-day; and
- Additional brackish groundwater desalinization, which would add 5.7 million-gallons-per-day.

Table 3-4 of the Final Environmental Impact Statement provides a Practicability Screening Analysis of the 31 specific alternatives. The Final Environmental Impact Statement found 24 of the 31 alternatives to have fatal flaws and determined them to not be feasible. The Final Environmental Impact Statement

[57] See Page II-1 of the Regional Raw Water Study Group's October 30, 2001 Comments on Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001
[58] From Table 2-19 in the Final Environmental Impact Statement; it should be noted this figure was arrived at differently than the 40 million-gallons-per-day figure from the U.S. Army Corps of Engineers' (Norfolk District) 1984 report

also considered the Ware Creek Reservoir with water drawn from the Pamunkey River, the Black Creek Reservoir with water drawn from the Pamunkey River, and the "no build" alternative. The Final Environmental Impact Statement found the Ware Creek reservoir alternative to be the most environmentally damaging of the three reservoir alternatives brought forward because it had the greatest loss of regulated waters and wetlands and was, therefore, dropped from further consideration.

The Final Environmental Impact Statement judged the "no build" alternative infeasible because it would not achieve the project purpose to satisfy the need for the additional long-term dependable potable water supply for the Lower Virginia Peninsula. The Black Creek alternative is less environmentally damaging than the applicant's project; however, it is not a practicable alternative under the Section 404 (b)(1) of the Clean Water Act Guidelines as previously discussed in Section 9, subparagraph a) of this Record of Decision.

Several commenters in 2001 suggested combining the three alternative components of conservation and use restrictions, new development of fresh groundwater sources, and additional brackish groundwater desalinization to fulfill the project purpose and need. According to the individual safe yield figures presented in the Final Environmental Impact Statement, the combination of all three non-structural alternatives would produce as much as 21 million-gallons-per-day. The Final Environmental Impact Statement, however, reported that the participating jurisdictions in the service area had already begun to implement and take advantage of these additional conservation measures.[59] The brackish groundwater desalinization plant came online in 1998 and is currently producing the 5.7-million-gallons-per-day described in the Final Environmental Impact Statement, and an additional 2.5 million-gallon-per-day groundwater desalinization plant for James City Service Authority recently became operational.[60]

The Corps of Engineers' Institute for Water Resources, subsequent to the Final Environmental Impact Statement issuance, provided expert assistance with the permit application review. The Institute for Water Resources issued a final report titled "An Evaluation of the Risk of Water Shortages in the Lower Peninsula, Virginia" on August 15, 2001. The report stated four major conclusions:

- The risk of water shortage could occur as early as 2015 and would fall between 2015-2030, depending upon the criteria used by decision-makers.[61]

[59] Ibid. , p. 3-93
[60] Five Forks Water Treatment Facility
[61] Institute for Water Resources Report, p. 67

- There will be a 12 percent chance of water shortage in 2040 and an additional supply of 24 million-gallons-per-day would be necessary to eliminate that risk, assuming 33 percent dead storage in Newport News Waterworks' existing reservoirs, and no curtailment of water supplies during drought. Under these parameters of 33 percent dead storage and no curtailment of water supplies, an additional water supply would be necessary before 2020.[62]

- The Institute for Water Resources accepted nearly all aspects of the applicant's water needs forecasts, except they found the Regional Raw Water Study group would service a slightly smaller percentage of the area population in 2040 and that there would be less "unaccounted for water" in the Newport News Waterworks operating system in 2040.[63]

The most likely scenario[64] based upon a Monte Carlo statistical analysis of point estimates contained in a November 2000 report prepared by HDR Engineering, Inc. is that there will be an 85.3-million-gallon-per-day requirement to be met in 2040. As shown in Table 1 of this Record of Decision, the total from all state-authorized water supply sources in the Regional Raw Water Study Group service area is 69.4-million-gallons-per-day, the region will need an additional 15.9-million-gallons-per-day of water to meet expected demand in 2040.

Table 14 of the Institute for Water Resources Report contains a typographical error. The correct figure for the point estimate of the "IWR Surface Water" entry in the table is 56.7 million-gallons-per-day, as shown in the March 2001 version of the IWR report.[65] This was clarified in the Institute for Water Resources memorandum dated September 12, 2002. Table 1 on Page 5 of this Record of Decision presents the Anticipated Year 2040 treated water demand for the Regional Raw Water Study Group service area, the safe yield of existing water supply sources in the Regional Raw Water Study Group service area and the James City Service Authority's maximum authorized system capacity safe yield. This is the appropriate baseline against which the future water need is projected in this Record of Decision.

The Five Forks Water Treatment Plant's output is expected to increase to five million-gallons-per-day in 2010.[66] It is expected to meet water needs through only 2013 at the current growth rate in the county.[67] Special Condition No. 4 of

[62] Ibid., pp. 62-63
[63] Ibid., p. 65
[64] The "most likely scenario" equates to the mean simulated demand value for 2040 shown in the Institute for Water Resources Report, Table 12, p. 33
[65] The 56.7 figure is also discussed on p. 57 of the Institute for Water Resources Report
[66] Project Overview from James City Service Authority web site
[67] April 26, 2005 James City Service Authority news release

the Virginia Department of Environmental Quality permit for this withdrawal of groundwater requires that the Authority submit a new application assuring that the maximum amount of surface waters is utilized, and groundwater usage is minimized, if new surface water supplies become available during the term of the permit.[68]

Additional water conservation measures discussed in the 1997 Final Environmental Impact Statement are presently being implemented by Newport News Waterworks and other water suppliers in the Lower Virginia Peninsula. The only two remaining feasible alternatives from the Final Environmental Impact Statement are the 4.4 million-gallon-per-day additional fresh groundwater development and the King William IV Reservoir project. The additional fresh groundwater alternative is insufficient to meet the long-term requirement for an additional 15.9 million-gallons-per-day in 2040. Even if the applicant implements the additional groundwater alternative, the need would still exist for construction of the King William IV Reservoir project to achieve the project need and purpose.

Alternatives discussed in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 are short-term solutions and do not address the project purpose of a long-term water source to include 2040 and beyond. All of the alternatives discussed in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 have known but unquantifiable limitations, development problems, difficulty with varying State agency support, and uncertainty of supply in the most critical situations.

I find that the patchwork of small supply alternatives may not meet the long-term water supply needs of the Lower Virginia Peninsula and could place risks of adverse impacts and environmental damages on groundwater supplies, the Chickahominy River, Pamunkey River, and the James River. Such impacts may be as deleterious as the anticipated impacts from the loss of wetlands associated with construction of the reservoir. Excessive groundwater withdrawal may result in widespread saltwater intrusion and in a non-sustainable supply of potable water. Under the alternatives discussed in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, the Mattaponi River would remain untouched while other sources of water would be drawn down with the potential for environmental damage.

Therefore, I find that the suggested alternatives in the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 do not meet the stated project purpose. They encompass neither enough water supplies nor enough storage to withstand drought. Further, they do not

[68] Virginia Department of Environmental Quality Permit No. GW0043400, modified January 3, 2005

have the capability to prevent excessive drawdown of river flows. Reservoir storage must be the offsetting factor during times of extreme low water to maintain minimum river flows, the most important factor for maintaining viable rivers, estuaries and aquatic resources. The Commonwealth of Virginia cites the drought of 1999 in its correspondence commenting on the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, and expresses the opinion that humans will expend aquatic resources to provide themselves additional water during periods of low supply.

It should be noted that one of the 31 alternatives listed in the Final Environmental Impact Statement is groundwater desalinization as the single long-term alternative, with a safe yield of up to 30 million-gallons-per-day. However, it is not practicable because it is unlikely to be permitted by the Virginia Department of Environmental Quality due to potential regional aquifer drawdown.[69] The Final Environmental Impact Statement did not find practicable any additional fresh groundwater development alternatives other than that which would have produced a safe yield of 4.4 million-gallons-per-day; therefore, no other brackish or fresh groundwater withdrawal proposals are within the scope of alternatives to be considered in this Record of Decision.

n) Water Quality

Concerns have been expressed regarding potential adverse water quality impacts upon the shad population in the Mattaponi River. This resource is critically important to the Mattaponi Tribe as a source of both food and income, and a resource of cultural and religious significance. Special conditions of the 2002 Commonwealth of Virginia Department of Environmental Quality-issued Water Protection Permit/Water Quality Certificate amendment governing withdrawals from the Mattaponi River appropriately address this issue, and the 2004 Commonwealth of Virginia Department of Environmental Quality-issued Coastal Zone Management Act Consistency Concurrence. Title 33, CFR § 320.4 (d) states that issuance of a Section 401 of the Clean Water Act Water Quality Certificate is considered conclusive with regard to water quality considerations unless the U.S. Environmental Protection Agency advises of other water quality aspects to be taken into consideration; the Corps of Engineers has not been so advised.

Another water quality concern raised was with respect to water releases from the dam site into the downstream area of Cohoke Creek. The U.S. Environmental Protection Agency and the U.S. Fish & Wildlife Service believe that alteration of the natural flow of water and waterborne sediments may have an adverse impact upon 186 acres of downstream wetlands. A special condition of the

[69] Table 3-4 of the Final Environmental Impact Statement

Commonwealth of Virginia Department of Environmental Quality-issued Water Protection Permit/Water Quality Certificate requires maintenance of a minimum water release that is equal to the median monthly flow of Cohoke Creek at the dam site. This, as well as all special conditions of the state-issued certification, automatically becomes a special condition of any issued Department of the Army permit. I find this requirement to be an acceptable measure to minimize adverse impacts to water quality in the portion of Cohoke Creek downstream of the proposed dam.

By a June 23, 2005 letter to the North Atlantic Division Commander, the U.S. Fish & Wildlife Service raised a third water quality concern, specifically with respect to what actions would be taken to investigate and reduce methyl mercury contributions to the aquatic environment. According to a U.S. Geological Survey publication, mobilization of mercury in soils in newly flooded reservoirs or constructed wetlands have been shown to increase the likelihood that mercury will become a problem in fish.

There is no site-specific evidence to indicate that this will be a problem for the proposed King William Reservoir. Researchers recommend that flooding of wetlands be minimized in order to minimize production of methyl mercury, since wetlands contain larger quantities of organic carbon than uplands.[70] The U.S. Geological Service has indicated that they currently lack the detailed scientific knowledge that would be needed to accurately predict the scale of changes of mercury levels in fish communities, and whether development of the King William Reservoir itself would contribute to, or even possibly mitigate, mercury concerns in the Cohoke Creek watershed.[71]

The U.S. Geological Service suggests evaluating current conditions in existing reservoirs located in close proximity to the King William Reservoir to provide a baseline for predicting future conditions in the King William Reservoir. The applicant has selected the Beaverdam Creek Reservoir in Gloucester, VA for such an evaluation. The Beaverdam Creek Reservoir is approximately 40 miles east of the King William Reservoir, contained extensive wetlands prior to its inundation, and is in the same geologic setting as the King William Reservoir. No mercury problems of any kind have been reported in the Beaverdam Creek Reservoir.[72] Because of the proximity of the two reservoirs and the same geologic setting, it is reasonable to conclude there is no greater than a small risk of methyl mercury formation in the King William Reservoir. Nevertheless, if this

[70] Kelly, C.A., J..W.M. Rudd, R.A. Bodaly, N.P. Roulet, V.L. St. Louis, A. Heyes, T. R. Moore, S. Schiff, R. Aravena, K. J. Scott, B. Dyck, R. Harris. B. Warner and G. Edwards. 1997.. "Increased in fluxes of greenhouse gases and methyl mercury following flooding of an experimental reservoir, " Environ. Sci. Technol. 31: 1334-1344.
[71] See U.S. Geological Service July 22, 2005 letter to Newport News Waterworks
[72] See July 22, 2005 letter from City of Newport News

were to occur, the Commonwealth of Virginia would require the applicant to take appropriate measures to address water quality issues.

The Commonwealth of Virginia Department of Health and the Department of Environmental Quality have established programs to assess the risks to human health caused by heavy metals, such as mercury, in the environment.[73] The Water Protection Permit/Water Quality Certificate requires the applicant to submit water quality and ecological monitoring plans; these plans will include sampling and analytical programs to address the potential for methyl mercury formation in the reservoir.[74] If methyl mercury were to become present in the King William Reservoir, the Commonwealth of Virginia would require the applicant to take appropriate measures to address water quality issues.

o) Energy Needs

This non-hydropower project is not intended to satisfy energy needs in the project area, and it would not have an appreciable direct long-term impact upon energy supplies, consumption or conservation patterns. Some short-term increases in consumption can be expected during the construction phase, to provide power for movement and operation of various types of construction equipment.

p) Safety

Given that the City of Newport News Waterworks has dams at existing water supply facilities, it is reasonable to presume they have qualified persons to safely design the King William IV Reservoir project's earthen dam. It is also reasonable to expect that appropriate Commonwealth of Virginia dam safety criteria, promulgated by the Department of Conservation and Recreation, Division of Dam Safety, will be followed. Safety standards have also been promulgated by the U.S. Department of Transportation with regard to pipeline construction and it is incumbent upon the applicant to adhere to these requirements. Finally, safety issues pertaining to recreational usage of the proposed reservoir are the responsibility of the applicant pursuant to state laws and regulations.

q) Food & Fiber Production

No appreciable impacts in this regard are anticipated. Some of the wetland mitigation sites are likely to consist of abandoned farm fields, but it is not anticipated that existing farm fields would be converted into mitigation sites.

[73] Ibid.
[74] Ibid.

r) Mineral Needs

No appreciable impacts in this regard are anticipated.

s) Consideration of Property Ownership

No impingement of property ownership rights is anticipated. King William County has a host agreement with the applicant that grants the requisite property rights to construct the King William IV Reservoir project. It would be the responsibility of the applicant to obtain any necessary property rights prior to commencement of any mitigation project. The responsibility for issues pertaining to water rights rests with the Commonwealth of Virginia; the applicant has been granted a permit by the Commonwealth to construct and operate the proposed facility. As stated at Title 33, CFR § 320.4 (g)(6), any disputes over property ownership will not be a factor in our public interest decision.

t) Needs and Welfare of the People:

The issue of the need for an additional potable water supply is one of the major considerations in this permit application. The Lower Virginia Peninsula lies within the state-designated Eastern Virginia Groundwater Management Area. Any entity wishing to withdraw more than 300,000 gallons or more per month must obtain a permit from the Virginia Department of Environmental Quality.[75] This is evidence that groundwater resources in the Lower Virginia Peninsula are stressed. Project opponents suggest that additional groundwater utilization can obviate the short-term need for a reservoir. However, as discussed in subparagraph m) of this section, the Final Environmental Impact Statement concluded the only practicable groundwater-based alternatives would yield 4.4 million-gallons-per-day of fresh groundwater and 5.7 million-gallons-per-day from a groundwater desalinization plant that has been operating since 1998. I find that the James City Service Authority's Five Forks Water Treatment Plant does not significantly change the need for an additional water source through the year 2040 and beyond, and that the 4.4 million-gallons-per-day of fresh groundwater is insufficient to meet the long-term need for an additional water supply for the Lower Virginia Peninsula. Overall, I find that constructing the King William IV Reservoir project is necessary to address the recognized public need[76] and to satisfy the project purpose of providing a dependable, long-term water supply for the Lower Virginia Peninsula in a manner that is not contrary to the public interest.

[75] From Virginia Department of Environmental Quality web site (http://www.deq.virginia.gov/waterresources/gwater.html)
[76] p. 34 of 2002 Decision Memorandum

11. General Public Interest Review Criteria and Analysis:

As indicated at Title 33, CFR § 320.4 (a)(2), the following general criteria will be considered in the evaluation of every permit application:

a) *Relative Extent of the Public and Private Need for the Proposed Structure or Work*

As indicated in the January 1997 Final Environmental Impact Statement, the proposed King William IV Reservoir project and transportation pipelines and intake are the significant part of the preferred alternative necessary to meet the applicant's project purpose.

After a thorough review of the administrative record (including the Final Environmental Impact Statement, the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, and comments of the applicant, the general public, and Commonwealth of Virginia), and applicable guidance promulgated by the Headquarters, U.S. Army Corps of Engineers, the applicant's purpose and need statement is hereby determined to be proper.

No one can forecast with certainty the varying and complex factors in water supply planning such as projections of population and employment growth, future safe yields, and the probability/frequency/duration of droughts. However, large, complex water supply projects often have a planning period of 50 years, which is the standard in the Commonwealth of Virginia. The applicants for reservoir projects in the Commonwealth of Virginia rely upon state water supply laws and regulations to project future needs. The standard of the Department of the Army Regulatory Program is for applicants to submit reasonable and accurate information as part of their permit application submittals. The applicant elected to utilize official local projections of population and employment growth. I find these to be a reasonable basis upon which to partially evaluate future water supply needs.

Another aspect of the project need question is the barometer one uses to assess when additional water supplies are necessary. The Corps of Engineers' Institute for Water Resource's conclusion is that additional water supplies may be needed by 2015 based upon the expected future levels of supply and consumption. The Commonwealth of Virginia determines the level of future need as the projected future water demand minus the current water capacity, i.e. the safe yield of all existing approved sources of water. The Commonwealth of Virginia safe yield determination assumes a worst-case scenario of lowest expected level of supplies, 33 percent reservoir dead storage, combined with highest expected

water use, with minimized risk of water shortage. Further, the risk of saltwater intrusion in the long-term is also minimized with the King William IV Reservoir project rather than continued long-term groundwater withdrawals.

b) The Practicability of Using Reasonable Alternative Locations and Methods to Accomplish the Objective of the Proposed Structure or Work

Based upon the analyses contained in Section 9 and Section 10, subparagraph m) of this Record of Decision, and as indicated in the Final Environmental Impact Statement, the currently proposed 1,526-acre King William IV Reservoir project is the least environmentally damaging practicable alternative to achieve the project need and purpose.[77]

The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 contains a conclusion that "...the City of Newport News was predisposed..." to the King William Reservoir alternative because the City of Newport News and King William County signed a Project Development Agreement under which development of the King William IV Reservoir project would proceed.[78] I have reviewed this claim, along with the applicant's contention that this agreement did not lock the applicant into the option of constructing the King William IV Reservoir project to the exclusion of other alternatives. With a limited number of large reservoir sites in the area, the Regional Raw Water Study Group tried to obtain agreements with the host counties as part of the planning process. They also tried to obtain host county rights for the Black Creek Reservoir site, but they were unable to secure them. Thus, the Regional Raw Water Study Group was not predisposed towards the King William IV Reservoir project site, but made an agreement with King William County for planning purposes.

Although the applicant entered into the Project Development Agreement prior to submission of their permit application, it is not unusual for government entities to enter into written agreements on collaborative efforts such as this in order to justify the expenditure of public funds during the project development phase.

The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 reintroduced an alternative that was originally considered and rejected during the environmental impact statement process. Specifically, the alternative would involve increasing the water withdrawal from the Chickahominy River from 40 million-gallons-per-day to 61 million-gallons-per-day. In November 1992, the U.S. Army Engineer District, Norfolk, the U.S. Environmental Protection Agency, and the U.S. Fish and

[77] See Table 3-4 of the Final Environmental Impact Statement
[78] See p. 20 of Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001

Wildlife Service agreed that this alternative should be excluded from further consideration on the basis of water quality and quantity concerns. The Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 attributes the rejection of this alternative to a lack of expected safe yield, and speculates that the Commonwealth of Virginia may modify the existing in-stream flow-by requirements in the river so as to allow additional withdrawal of water, partly because the pumping capacity at the Newport News Waterworks Chickahominy River Pumping Station has been increased to 61 million-gallons-per-day. However, the document also states that the Commonwealth of Virginia would not likely authorize additional withdrawals from the river. Additionally, in a October 31, 2001 memorandum, the Commonwealth confirms that it is unlikely approval would be granted to increase the water withdrawal. Therefore, unless the stated position of the Commonwealth is reversed, this alternative cannot be considered practicable.

c) The Extent and Permanence of the Beneficial and/or Detrimental Effects Which the Proposed Structure or Work is Likely to Have on the Public and Private Uses to Which the Area is Suited

Permanent beneficial effects are expected to result from an increased supply of potable water to meet the long-term needs of the Lower Virginia Peninsula. The population of this area is expected to approach 600,000 by the year 2040. There are also many commercial and industrial customers plus two military installations that would directly benefit from successful completion of this project.

Ensuring adequate potable water supplies would assist in maintaining the stability of the local economy; a risk of water supply deficits would render the Lower Virginia Peninsula area as being potentially an unattractive locale for habitation and for continued siting and potential relocation of businesses. It may also affect the long-term military presence and capability on the Lower Virginia Peninsula.

This proposal carries a substantial environmental cost, but with substantial benefit. A large, mature, upland/wetland valley complex would become inundated with water as part of reservoir construction. The ecological impacts and losses would be of a magnitude not previously permitted in the Mid-Atlantic Chesapeake Bay region under the Clean Water Act. However, the applicant will be required to provide sufficient compensatory mitigation to ensure no net loss of wetland functions and values, in accordance with the current policy of the Department of the Army Regulatory Program.

Despite the wetland impacts, the currently proposed 1,526-acre King William IV Reservoir project proposal was determined in the Final Environmental Impact Statement to be the least environmentally damaging practicable alternative that

would achieve the purpose of the project. The discharges of fill material related to the King William IV Reservoir project have also been found to comply with the Section 404 (b)(1) Clean Water Act Guidelines.

The project may also result in adverse impacts to three Native American tribes use of the area. The Programmatic Agreement for protection of cultural and historic resources, under the auspices of the National Historic Preservation Act, provides satisfactory mitigation for these impacts.

12. Findings and Conclusion:

a) I have completed the public interest review for the King William IV Reservoir project permit application and carefully weighed the expected benefits and detriments of this project. As a result of the balancing of these factors, I have determined that it would not be contrary to the public interest to issue a Department of the Army permit to the City of Newport News for this project. I have given full consideration and appropriate weight to all comments received on this project. I have determined that the expected benefits of this project's alteration of 403 acres of wetlands outweigh the damages to this resource. The permit will require the applicant to implement and execute a Streams & Wetlands Mitigation Plan to compensate for aquatic resource losses, and to comply with a Memorandum of Agreement for protection of cultural and historic resources. I further find there are no overriding nationally significant issues in this application. Finally, this decision comports with Congressional policy as expressed in Section 101 of the Clean Water Act.

b) I find that there is a need for a reliable, dependable, additional water supply to be available to the Lower Virginia Peninsula within the 2015 to 2040 timeframe.

c) I find that the applicant's proposal to construct the KWR-IV reservoir and associated pipelines and intake is a practicable alternative to meet that need.

d) I find that, based upon available information, the King William IV Reservoir project, along with conservation measures and utilization of groundwater supplies, as well as the inclusion of the wetlands and streams mitigation plan, and the Section 106 Programmatic Agreement, is the least environmentally damaging practicable alternative to meet the public need, as indicated in Section 3.6.3 of the January 1997 Final Environmental Impact Statement.

e) I conclude, after careful review of all concerns, granting a Department of the Army permit for the King William IV Reservoir project alternative described in the Final Environmental Impact Statement, and including all the special conditions described above is not contrary to the public interest. This Record of Decision

CENAD-CG 29 July 2005

SUBJECT: Record of Decision Memorandum for Permit Application Number 93-0902-12 (Norfolk District) by the City of Newport News, Virginia for the King William Reservoir Project

completes the National Environmental Policy Act and Corps of Engineers' public interest review processes.

The project manager for this matter is Mr. James W. Haggerty, North Atlantic Division's Regulatory Functions Administrative Appeals Review Officer.

29 Jul 05
Date:

MERDITH W. B. TEMPLE
Brigadier General, U.S. Army
Division Engineer
U.S. Army Corps of Engineers,
North Atlantic Division

Enclosures:
Project Vicinity Map (Map 1)
Regional Map (Map 2)
Regional Raw Water Study Group Service Area and Host Communities (Map 3)
Permit Special Conditions
Application Drawings

REFERENCES

Laws, Regulations & Executive Orders:

1) Title 33, CFR § 320.1, General Regulatory Policies: Purpose and Scope.
2) Title 33, CFR § 320.2, General Regulatory Policies: Authorities to issue permits.
3) Title 33, CFR § 320.4, General Regulatory Policies: General policies for evaluating permit applications.
4) Title 33, CFR § 325.8, General Regulatory Policies: Authority to issue or deny permits.
5) Title 33, CFR § 325, Processing of Department of the Army Permits: Appendix B (National Environmental Policy Act Implementation)
6) Title 33, CFR § 325, Processing of Department of the Army Permits: Appendix C (Procedures for the Protection of Historic Properties)
7) Title 40, CFR § 1502.9, Environmental Impact Statement: Draft, final and supplemental statements.
8) National Historic Preservation Act of 1966, as amended, Section 106 (Title 16, U.S. Code § 470f)
8) Clean Water Act of 1977, as amended, Sections 401 & 404 (Title 33, U.S. Code § 1341 & 1344)
9) Rivers & Harbors Act of 1899, Section 10 (Title 33, U.S. Code § 403)
10) Coastal Zone Management Act of 1972, as amended, Section 307 (Title 16, U.S. Code § 1456)
11) Endangered Species Act of 1973, as amended, Section 7 (Title 16, U.S. Code § 1536 (a)(2))
12) Treaty at Middle Plantation (1677), Commonwealth of Virginia and Native American Tribes, 4 Early American Indian Documents: Treaties and Laws, 1607-1789, 82-87 (Alden T. Vaughan and W. Stith Robinson, eds. 1983)
13) Executive Order No. 11988, May 24, 1977, "Floodplain Protection"
14) Executive Order No. 12898, February 11, 1994, "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations"
15) Executive Order No. 13007, May 24, 1996, "Indian Sacred Sites"
16) Executive Order No. 13045, April 21, 1997, "Protection of Children From Environmental Health Risks and Safety Risks"

Supplemental Information:

1) U.S. Army Engineer District, Norfolk's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001
2) Letters from Virginia Gov. Gilmore and the Regional Raw Water Study Group's Comments on the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001, October 31, 2001
3) Final Environmental Impact Statement, January 1997

4) Institute for Water Resources Special Study: "An Evaluation of the Risk of Water Shortages in the Lower Peninsula, Virginia" 70 pp. August 15, 2001
5) Public comments on the Norfolk District Engineer's Final Recommended Record of Decision to the Division Engineer dated July 2, 2001 and the Draft & Final Environmental Impact Statements

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U.S. Fish & Wildlife Service: May 17, 1994; June 13, 1994; July 25, 1997; July 22, 1999; May 1, 2001; October 14, 2003; March 29, 2004; February 1, 2005; June 23, 2005

U.S. Environmental Protection Agency: June 1, 1994; July 25, 1997; May 28, 1998; August 18, 1998; August 5, 1999; February 25, 2000; May 1, 2001; March 22, 2004

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